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A Sickness Survey of Winchester, Mass.

Part I: General Mortality

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IN THE spring of 1927, the Massachusetts Department of Public Health conducted a morbidity study in the town of Winchester, Mass. This town, one of a group of cities and towns which comprise Metropolitan Boston, is about eight miles north of downtown Boston. Winchester is largely residential, although there are a few manufactories, industries, and small stores. The estimated population of the town in November, 1926, was 11,890. It has a 55-bed hospital, and a very active Visiting Nurse Association. The schools of Winchester are among the best in the state, and for a number of years they have used the physical examination records which comply with the standards as set forth by the State Departments of Education and of Public Health. The Board of Health is a most progressive one, and is doing a very satisfactory piece of work. There are 28 physicians living in Winchester, 14 of whom practice in the town.

METHOD OF APPROACH

The surveyors made a house-to-house canvass of the town and obtained from each person interviewed the following information concerning every member of the family: the name, address, and position in the family, the country of birth, the age, sex, whether or not the individual was a wage earner, the present illness and illnesses during the past year, the type of treatment secured, and the amount of time lost from work. For all individuals under 20 years of age, additional information was sought relative to diphtheria, chicken pox, German measles, mumps, scarlet fever, measles, and whooping cough. A history

NOTE: The results of the Winchester studies will be published in the JOURNAL in three parts. The second part dealing with the contagious diseases, and the third with the relation of physical defects to school absenteeism, will appear in the October issue.

of any of these diseases necessitated questions concerning the type of treatment and the year in which the disease occurred. An estimate was made of the economic status of the family, classifying all families in one of four groups: poor, moderate, comfortable, or wealthy.

If no member of the family was at home, blanks were left requesting that the desired information be forwarded, as the time allotted to the survey did not permit return visits. During one week of the survey, the practicing physicians in Winchester reported to the department the number of sick individuals whom they attended. This information, together with the records of the Winchester Visiting Nurse Association, was compared with the data collected by the investigators to check on the reliability of the survey. The death records were tabulated similarly to the morbidity records. A study of nursing and hospital facilities was made by consulting the records of the Winchester Visiting Nurse Association and those of the Winchester Hospital, as well as by the questionnaire method. The contagious disease records of the Winchester Board of Health were obtained to ascertain the number of diseases that were reported and the number hospitalized. The data contained on the physical record forms used in the Winchester schools was studied in relation to school absenteeism.

GENERAL DISCUSSION OF RESULTS

Records were obtained from 9,746 individuals. This comprised 82 per cent of the estimated population of the town at the time the survey was made. A census of the surveyed population is shown in Table I.

Winchester has an older population than the state. The proportion of foreign born population is less than that of the state as a whole, although the proportion of Irish and Italian is higher in Winchester than in Massachusetts as a whole. The sex ratio of Winchester differs materially from that of the state proper, since Winchester has 80.8 males for every 100 females, while Massachusetts has 96.3 males for every 100 females.

It is impossible to state mathematically the degree of reliability of the Winchester sample. The surveyed individuals were well distributed throughout the town, and in all probability furnish a very fair sample of the whole town. The accuracy of the answers given to the investigators varies considerably with the different questions. In the contagious disease part of the study the householder was asked specifically whether or not the individual members of the family had had the given diseases. The answers to these questions were largely correct, although there was some confusion between measles and German measles. The follow-up question regarding whether or not a

TABLE I

POPULATION OF WINCHESTER
(82 per cent of town)

Age	United States M.	United States F	Ireland M.	Ireland F.	Italy M.	Italy F.	Canada M.	Canada F.	Others M.	Others F.	Total M.	Total F.	Both Sexes	Per cent Survey	Per cent State, Federal Census 1920
0-5	508	510	0	2	0	1	3	8	5	2	516	523	1039	10.7	12.0
6-15	850	892	1	2	11	6	4	9	12	9	878	918	1796	18.5	18.0
16-25	573	677	21	73	27	34	16	68	22	34	659	886	1545	15.9	16.2
26-35	428	595	17	56	49	49	23	60	36	57	553	817	1370	14.1	16.9
36-45	455	501	44	78	61	52	32	77	44	46	636	754	1390	14.3	14.0
46-55	361	431	58	79	36	29	34	62	38	51	527	652	1179	12.2	11.2
56-65	239	262	45	58	19	8	30	55	39	34	372	417	789	8.1	6.8
66-75	95	193	14	20	2	1	20	27	9	19	140	260	400	4.1	3.7
Over 75	29	91	3	8	0	0	10	13	5	5	47	117	164	1.7	1.2
Total	3549	4166	204	376	206	181	174	379	215	278	4353	5384	9746		
Total Both Sexes		7715		580		387		554		493		9746			
Percentage by nativity for survey		81.4		6.6		4.0		5.7		2.4					
Percentage by nativity for State 1920.		71.8		4.8		3.0		7.0		13.4					

NOTE: Totals include individuals for whom one or more items regarding age, sex and nationality are not complete.

doctor had seen the sick child was not so accurately answered, as many householders evidently confused the call of the Board of Health with that of the practicing physician.

In the morbidity study, the question whether the individual had had any illness in the past year was asked, and the answer depended on what the person answering the question considered an illness. Some considered the slightest pain an illness, while others did not consider themselves sick unless they were confined to bed; consequently, the morbidity figures are more accurate in the more severe conditions than in the minor ailments. But, as the survey was primarily intended to ascertain the extent of real illnesses rather than to catalogue the many aches and pains which are present in the majority of individuals, it is felt that the main object has been attained, and that the Winchester Survey gives a representative picture of the extent of real illnesses, as well as some indication of the extent of minor ailments.

During the year preceding the survey, 3152 individuals were reported as sick. This comprised 32.4 per cent of the surveyed population of Winchester. About one-sixth of those sick had more than one illness during the year, as 2581 reported one illness, 465 reported two illnesses, 87 reported three illnesses, and 4 reported five illnesses.

The nomenclature of diseases is that which was furnished the investigators by the householder. No attempt was made by the surveyors to make these causes conform with those of the International Classification of Causes of Death. The morbidity nomenclature tells what the people, themselves, complained of as sickness. Of striking interest is the fact that only one-half of the mothers who bore children during the year considered normal childbirth an illness. Upon questioning, mothers would repeatedly say that childbirth was a normal function and that they were not sick. In the Italian district this was particularly marked, as only one-seventh of the childbirths were reported to the surveyors.

During the period covered by the survey, 149 residents of Win-

TABLE II

MORBIDITY IN WINCHESTER

Diseases	Mortality	Crude Mortality Rate per 1000	Morbidity in Survey	Crude Morbidity Rate per 1000 in Survey	Crude Morbidity Rate per 1000 in Winchester
Pneumonia	10	0.8	56	5.8	6.6
Tuberculosis	11	0.9	12	1.2	2.1
Other respiratory	1	0.1	1477	151.8	151.9
T. & A. Operation			83	8.5	8.5
Other Operations			45	4.6	4.6
Infectious Diseases	5	0.4	397	40.8	41.2
Cancer	21	1.8	13	1.3	3.1
Nephritis	4	0.3	38	3.9	4.2
Apoplexy	19	1.6	11	1.1	2.7
Heart	35	2.9	128	13.1	16.0
Stomach			182	18.7	18.7
Intestines	1	0.1	132	13.6	13.7
Rheumatism			202	20.8	20.8
Nervous condition (Including headache)	2	0.2	161	16.5	16.7
Female Genitals			38	3.9	3.9
Childbirth			96	9.9	9.9
Tired Feeling			35	3.6	3.6
Accidents	3	0.3	122	12.5	12.8
Swelling			4	*	*
Pain			6	*	*
Loss of Weight			9	*	*
Diabetes	3	0.3	13	1.3	1.6
Convalescence			5	*	*
Chronic Invalidism			33	3.4	3.4
Adenitis			15	1.5	1.5
Mental			13	1.3	1.3
High Blood Pressure	11	0.9	53	5.4	6.3
Syphilis			5	*	*
Ill-defined			8	*	*
Other conditions	23	1.9	460	47.3	49.2
All causes	149	12.5	3852	396.0	408.5

* No rates computed where the crude morbidity rate in Winchester would be less than 1.0.

** In the subsequent tables, morbidity is represented by data from the survey alone.

chester died. These cases represented morbidity during the year but were not included in the tabulation of the survey. In order to obtain the correct morbidity rate, the mortality rates have been added to the morbidity rates obtained from the survey in Tables II and III.**

The incidence of most of the diseases is too small to make adjusted rates for age and sex. The same applies to nativity adjustments. In Table III an attempt has been made to give some idea of the age and nativity distribution in all types of illness. This table shows that the Irish and the Italians have lower rates than the native born and the Canadians. While these differences for "total all ages" are statistically significant, it is believed that other errors than mere chance enter in, as we find that the total time lost from sickness for these respective groups is larger among the nativity groups that give the lower incidence. The error, doubtless, is due to the probability that the Irish and the Italians reported only the more severe illnesses, although it is admitted that there may be real differences.

TABLE III

MORBIDITY IN WINCHESTER: BY AGE AND NATIONALITY
(Rates per 1000)

Age	United States	Irish	Italian	Canadian	Others	Total Male	Total Female	Total	Ratio Morbidity Rate Females to Males
Under 5	388	*	*	*	*	371	406	388	1.09
5-15	412	*	*	*	*	394	423	408	1.07
16-25	282	181	229	381	250	255	293	277	1.15
26-35	346	247	235	373	269	268	358	334	1.34
36-45	385	229	292	312	367	303	402	356	1.33
46-55	457	248	400	366	326	348	465	413	1.34
56-65	518	514	444	494	288	400	573	491	1.44
66-75	756	588	*	659	785	588	815	736	1.39
Over 75	1034	*	*	*	*	808	977	929	1.21
Male (All ages)	354	231	291	411	302	359			
Female " "	452	343	304	422	348		446		1.24
Total " "	407	303	297	418	335			407	

* No rates computed where the population of the age groups is very small.

In all the age groups the females have higher morbidity rates than the males. The ratios of the rates vary from 1.07 in the 16-25 year group, to 1.44 in the 56-65 year group, with the ratio for all ages of 1.24. A second ratio for all ages was computed, omitting childbirth and diseases of the female genitals. This ratio (1.20) shows that sickness is more common among women even under these conditions. This phenomenon is not confined to Winchester alone. Sydenstricker[1] shows in his morbidity study of Hagerstown that the ratio of sick females to males was 1.28; and omitting childbirth and diseases of the

female genitals the ratio was 1.16. The ratio of the death rates among females to that among males in Winchester for the past 23 years is 0.94. Females apparently have more sicknesses than males, but the death rate is less. The relation between sickness and time lost is shown in Table IV.

The total number of days lost from illness in Winchester was 12,904. Accidents accounted for 2898 days, respiratory diseases 2570 days, intestinal diseases 1244 days, stomach complaints 965 days, heart affections 923 days, and the remainder were distributed among various other conditions.

The types of illnesses were studied in relation to the economic status of the individuals. When all diseases are considered collectively, there are significant differences between the rates for the various economic groups, the poor having the lowest rate, and the comfortable and wealthy, the highest. Whether this depicts real differences or merely indicates that more minor complaints were reported by the well-to-do is difficult to ascertain. The only individual diseases where significant differences were found were in the respiratory group, accidents among males, and rheumatism and stomach complaints among females. In the respiratory group the reporting of colds for both sexes increased with better economic conditions. Accidents among males were more common in the moderate wage groups. This would be expected, as mechanicians, electricians, and men exposed to hazardous occupations are largely in this group.

Stomach complaints and rheumatism are both significantly high in the comfortable and wealthy female groups, but this again may only indicate differences in reporting. The rates for the diseases with significant differences are given in Table V.

There are slightly significant differences in the per cent of cases that employed physicians in the different groups (Table VI).

There is no significant difference between the percentage of sick males and females who consulted physicians; the respective rates being 78.8 for the males and 77.8 for the females.

Of the total cases of sickness 78.4 per cent employed a physician. There are no significant differences between the various nativity groups in regard to the employment of physicians, but the Italians and Canadians show lower rates than the other groups. There is a possibility that if the native born children of these various nativity groups were included with their parents, these differences might be significant. The percentage of physicians employed varied considerably with the different complaints. Table VII shows this for the more common diseases.

TABLE IV

TIME LOST: BY NATIVITY GROUPS

Country of Birth	Wage Earners			Average Time Lost (Days per year)		
	Male	Female	Total	Male	Female	Total
United States	1245	517	1762	5.9	2.7	5.0
Ireland	147	117	264	8.7	2.5	6.0
Italy	124	10	134	9.5	3.7	9.1
Canada	93	89	182	7.1	1.8	4.5
Other Countries	122	61	183	3.5	1.2	2.7
Not Stated	6	9	15			
Total	1737	803	2540	6.3	2.5	5.1

TABLE V

MORBIDITY RATES: BY ECONOMIC STATUS

	Poor			Moderate			Comfortable & Wealthy		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Population	1152	1106	2258	1477	2026	3503	1643	2114	3757
Total Illnesses	243	324	567	487	830	1317	728	1146	1874
Rate per 1000	211	293	251	330	408	371	443	542	499
Respiratory Diseases	96	98	194	197	287	484	359	480	839
Rates per 1000	83	89	86	134	142	138	218	227	223
Accidents	12	4	16	39	24	63	14	27	41
Rates per 1000	10	4	7	26	12	18	9	13	11
Rheumatism	21	21	42	12	39	51	23	80	103
Rates per 1000	18	19	19	8	19	15	14	38	27
Stomach	8	14	22	19	34	53	39	65	104
Rates per 1000	7	13	10	13	17	15	24	31	28

TABLE VI

PERCENTAGE OF PHYSICIANS EMPLOYED: BY ECONOMIC STATUS

	Poor	Moderate	Comfortable & Wealthy
Male	75.3	77.9	80.6
Female	71.9	76.4	80.8
Total	73.6	76.7	80.7

TABLE VII

TYPE OF TREATMENT

Rate per 100

Disease	Registered Practitioner	Christian Science Healer	Chiropractor	None
Other respiratory	67.2	0.4	0.1	32.3
Infections	90.0	0	0	10.0
Heart	90.4	0	0	9.6
Stomach	72.0	0	0	28.0
Intestines	88.0	0	0	12.0
Rheumatism	73.4	0	0	26.6
Nervous	81.1	0	0	18.9
Accidents	94.8	0	0	5.2
All causes	78.4	0.5	0.1	21.0

Six physicians reported attending 235 cases during the week of June 1 to 7, 1927. If the physicians who did not report their cases had seen a similar number of cases to those who furnished reports, there would have been 548 cases attended by physicians during that week. If this represents 78.4 per cent of all the cases, there would have been 699 people ill in Winchester at that time. Our surveyors found

705 illnesses at the time the call was made. This gives added weight to the conclusion that the data collected is fairly representative of the true conditions in the town.

An attempt was made to determine the hospital and nursing facilities in Winchester by studying the records of the Visiting Nurse Association, by ascertaining the number of admissions to the Winchester Hospital, and by questioning a sample group of the surveyed population. The results indicate that Winchester is meeting the present demand for hospital and nursing care.

In the last fiscal year, the Winchester Hospital admitted 365 patients who were residents of the town, comprising about 3 per cent of the population. The proximity of Boston leads to the belief that many other patients went to other hospitals. Of these admissions, 87, or 23.8 per cent of the total Winchester admissions, were for childbirths, comprising 44.3 per cent of the births in Winchester. An additional 19.1 per cent of the births were hospitalized in out-of-town hospitals, making 63.4 per cent of the births in Winchester hospital cases. The per cent hospitalized by nativity is shown in Table VIII.

TABLE VIII

HOSPITALIZATION FOR CHILDBIRTH: BY NATIVITY OF MOTHER

(Rate per 100)

United States	Ireland	Italy	Canada	Other	Total
78.7	75	14.9	88.8	71.4	63.4

Since the numbers are so small, the maternal death rate by nativity is not included, as unwarranted inference for or against the quality of hospital service might be drawn.

Twenty-seven cases of respiratory diseases were hospitalized in the Winchester Hospital. This represents 1.5 per cent of the number obtained in the survey, and 7.4 per cent of the total admissions of Winchester patients to the hospital. The average length of stay for patients who were discharged alive from the hospital was 7.9 days, for those who died 3.4 days. The average length of stay for respiratory cases was 10.7 days, and for confinement cases 14.0 days. A large number of tonsil and adenoid cases made the average length of stay short.

About 10 per cent of the families in Winchester employed visiting nurses. These nurses cared for 1 patient in 193 homes, 2 patients in 69 homes, 3 patients in 3 homes, and 4 patients in 1 home. In the sample group interviewed by the surveyors, it was found that district nurses, practical nurses, and private nurses were employed about equally. As the surveyors queried only 63 families who had employed nurses, it is impossible to state whether the population at large would have shown a like distribution.

The private duty nurse received a salary ranging from $42 to $49 a week, being employed from a few hours in some instances to 83 days, the median time being 2 weeks. The practical nurse received from $15 to $35 per week, being employed from 4 days to 3 years, the median being 5 weeks. Nurses were employed for a great variety of causes, the chief one being childbirth. Two nurses were hired merely to help with the housework. As a general rule, the nurses employed were satisfactory, and there was no complaint of difficulty in securing their services.

CONCLUSIONS

1. The population of Winchester is not exactly representative of Massachusetts as a whole, as Winchester has an older population, an excess of females and fewer foreign born.
2. The findings of the survey are felt to be fairly accurate for the more serious illnesses, and considerably less accurate for such minor ailments as a headache, slight cold, etc.
3. Thirty-two per cent of the group surveyed reported being ill during the year preceding, an average of 1.2 times.
4. The crude morbidity rate for all reported illnesses was 409 per 1,000, the largest single group being colds and grippe with a rate of 152.
5. The Italians do not consider childbirth an illness, and most of the confinements occur at their homes.
6. Females have a higher morbidity rate than males, but a lower mortality rate.
7. The average time lost by wage earners for illness was 5.1 days. The average time lost by males was two and one-half times that lost by females.
8. There are apparent differences among the different nativity groups but these may be due to unknown errors. The Italians and Irish have low morbidity rates but have greater average time lost than the other nationalities. The Italians and Canadians employ doctors to a less extent than the other groups, but the small numbers make this finding insignificant statistically.
9. The number of illnesses reported increased with the economic status of the individual for all diseases as a whole, as well as for respiratory diseases, for rheumatism, and for stomach trouble among the females. Accidents were greater among males in the moderate economic group.
10. The percentage of physicians employed increased with the economic status.
11. Nursing and hospital facilities are apparently adequate to the present demand in Winchester.
12. The findings of this study emphasize the advisability of conducting similar surveys in connection with larger populations in order to eliminate the errors of chance fluctuation.

NOTE: Acknowledgment is made of the valuable aid given by the surveyors: Anna Crivello, Mary Cronin, Mrs. Filip Forsbeck, and Dr. Florence Hopkins. Without their indefatigable and intelligent services, together with their enthusiastic coöperation, this survey would not have been possible. Recognition is made of the assistance rendered by Estella L. Power in the compilation of the various tables, and by Dr. Carl R. Doering in their analysis.

REFERENCE

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Problems in the Prevention and Relief of Heart Disease*

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THERE is definite information concerning certain phases of heart disease; but there is much evidence which is controversial; and, of more importance, there are many phases of heart disease about which little or nothing is known. Many of the problems concerned in the prevention and relief of heart disease fall into this third category. The problem of what causes heart disease may be taken as an example. It is obvious that heart disease cannot be prevented unless the etiology of heart disease is known. Yet if one glances through a textbook of medicine it will be found that heart disorder is mentioned as a complication of many diseases, particularly the infectious diseases, listed therein. While this is true, it is true also that in many diseases, cardiac complications are extremely rare. Certainly the majority of the cases of heart disease do not have a varied etiology.

It is fairly well established that there are three common types of heart disease: rheumatic, syphilitic, and arteriosclerotic. We know definitely the cause of syphilitic heart disease; we are approaching a knowledge of the cause of rheumatic heart disease; but we know nothing of the cause or causes of that form of heart disease which is conveniently described as arteriosclerotic heart disease.

Curves of mortality statistics show that there is a continuous increase in the number of deaths due to heart disease. To approach the problem of prevention in an intelligent manner it is necessary to have, first, a comprehensive knowledge of the incidence of heart disease, that is, an understanding of the size of the problem; second, a knowledge of the causes, more particularly the common causes, if any; and third, a knowledge of the natural history of the different types of heart disease.

Some progress has already been made with regard to our knowledge of the incidence of heart disease. Drolet[1] tells us that heart disease in New York City is now responsible for more than one-fifth of all the annual deaths. He states that in 1925 deaths from all causes in New

* Read before clinic and dispensary workers, arranged by the Joint Program Committee of the Associated Out-Patients Clinics of the New York Tuberculosis and Health Association and The North Atlantic District of American Association of Hospital Social Workers, New York, N. Y., February 10, 1927.

York City totalled 71,864, of which 15,651 were due to heart disease, or a rate of 266 per 100,000 population. The mortality rate for pneumonia followed at 143 per 100,000, cancer at 115 for 100,000 and tuberculosis at 93 per 100,000 population. Yet in 1910, the total deaths from cardiac conditions numbered 8,350, or only one-half of what they are now, the death rate being 175 per 100,000 population, or 34 per cent lower.

These figures show that heart disease is the leading cause of death in New York City now and that is has increased rapidly in recent years. On a basis of similar reports it is estimated that almost 2,000,000 people in the United States suffer from heart disease.

Further data on the incidence of heart disease are given in the result of a study, made by the Heart Committee of the New York Tuberculosis and Health Association in coöperation with the Board of Education, on 1078 newsboys in New York City. These boys ranged in age from 10 to 17. It was found that 16, or 1.5 per cent, had organic heart disease. Among these, more than one-half presented a history of rheumatic infection, especially rheumatic fever; one-third had a history of tonsillitis and no other rheumatic infection and one-third gave no history at all of rheumatic infections.

Similarly I have examined recently, 1000 recruits for the United States Army, drawn from the New York area and ranging in age from 18 to 35. The incidence of heart disease in this group was 15, or 1.5 per cent. These cases all presented the lesions typical of rheumatic heart disease.

These studies, however, do not indicate the entire problem. The figures cited, for example, simply indicate that heart disease as a whole is the greatest single cause of death and that its incidence is rapidly increasing. We desire to know the types of heart disease which make up this total, and their rate of increase or decrease. In this total are there certain forms of heart disease which we can reasonably hope to prevent? and if so, what are they? and are they on the increase at the present time?

Moreover these samples are not sufficient for an accurate knowledge of the incidence of heart disease as it occurs in this country. Studies of samples from various parts of the United States might throw light on the regional distribution of the different types of heart disease, and answer the question as to whether or not a particular climate is conducive to the development of a particular form of heart disease. Furthermore, those studies would emphasize to the public the great economic loss to the country as a result of heart disease.

Strange as it may seem, for centuries heart disease was considered

almost entirely from the viewpoint of structural changes in the heart, that is to say, from the pathological standpoint. The pathologist learned to recognize structural lesions of the heart and the clinician spoke of "myocarditis," "mitral stenosis," and "aneurysm." Such diagnoses were considered sufficiently descriptive of individual cases. Later the interpretation of heart disease from the functional standpoint was conceived; that is, disordered function of the heart, and we began to hear of such functional diagnosis as "cardiac failure," "auricular fibrillation," and "hypertension." Thus we learned to consider heart disease from its pathological or structural standpoint and from its functional aspects.

Within recent years, due in most part to the rapid increase in the incidence of heart disease, the etiology or cause of heart disease has been and is being more carefully studied. So that now heart disease is being considered also from its etiological aspects.

One of the earliest studies on the causes of heart disease, as they are now classified, was made by Cabot[2] in 1914. His sample for study consisted of 600 hospital cases in which a failing heart was the most notable feature. Briefly, he found that rheumatic heart disease made up approximately 45 per cent of the total; arteriosclerotic and hypertensive heart disease about 34 per cent; syphilitic heart disease 12 per cent; thyroid heart disease 1 per cent; and heart disease of unknown origin 5 per cent.

More recently Wyckoff and Lingg,[3] made a study of 1001 cases of heart disease, of which 85.4 per cent were among cardiac clinic patients and 14.6 per cent among private cases. They found that about 25 per cent of the cases presented rheumatic heart disease; about 40 per cent arteriosclerotic heart disease; about 10 per cent syphilitic heart disease; and about 10 per cent heart disease of unknown cause.

Similarly,[4] I have recently analyzed 1300 cases of heart disease, using for study a mixed group of adults comprising ambulatory cardiac patients attending a cardiac clinic, and hospital bed patients. In this sample, the rheumatic type comprised about 35 per cent of the total; the arteriosclerotic type 33 per cent; syphilitic type 8.5 per cent; and unknown heart disease 20 per cent. All other causes comprised less than 4 per cent of the total.

While the incidence of the different types of heart disease in the studies described differs to some extent with different observers, it is striking to note that over 75 per cent of the cases in these series can be classified under three types : rheumatic; arteriosclerotic and syphilitic. In each study there have been a number of patients with heart disease of unknown cause. In two of the series it is believed that the unknown

group is made up for the most part of patients having rheumatic heart disease in which that disease was the only manifestation of the rheumatic infection.

These figures are significant but similar studies are needed of samples taken from different parts of the country before a comprehensive knowledge of the causes of heart disease is obtained.

It appears that the infectious types of heart disease, which are the rheumatic and the syphilitic, make up from 35 to 45 per cent of all types of heart disease and that the so-called senescent or degenerative form, such as the arteriosclerotic type makes up a like percentage.

ARTERIOSCLEROTIC HEART DISEASE

Considering first, the so-called degenerative types of heart disease —those types associated with arteriosclerosis, arterial hypertension, Bright's disease and those alterations in the heart which occur in old age—have we or can we in the near future, hope for any method for their prevention? Probably not. We have no established facts concerning the prevention of the degenerative types of heart disease. It is true that much has been written of the physical stress and nervous strain of the present-day mode of living as a factor in the production of high blood pressure and hardening of the arteries. Also emphasis has been placed on the rôle of improper diet, obesity, general toxic conditions, overwork, unsanitary conditions, excesses, and focal and general infections as causes of this form of heart disease. While no preventive methods are at present known for this type of heart disease, people can be taught the right way to live. Though we cannot cure this disease, we can hope to relieve some of the suffering produced by it and thus hope to prolong life.

It has been suggested that when the statistics are analyzed further it may be discovered that the increasing rate of deaths actually takes place in this group and not in the infectious group in which the possibility of prevention and cure remains open. That is, if the increase in death rate from heart disease is due to an increase in the degenerative or old age form of the disease, then it might indicate that fewer patients are now dying from preventable disease in youth and middle life. Curves of mortality rates for infectious diseases and for heart disease which Cohn[5] has had prepared actually suggest this. Practically parallel with a decrease in deaths from the preventable infectious diseases there has been a corresponding rise in the mortality curve of heart disease. This may temper our excitement concerning the increasingly high mortality from heart disease.

SYPHILITIC HEART DISEASE

In the studies cited 8 to 10 per cent of the total number of cases of heart disease observed had their origin in a syphilitic infection—yet syphilis is preventable.

It is known that there is usually a latent period of from 15 to 20 years from the date of the original syphilitic infection to the onset of symptoms of heart disease. No doubt the syphilitic infection has attacked the blood vessels and heart during this period, but the disease is usually not recognized until the onset of the heart symptoms causes the patient to seek relief. Thus there is a period of many years during which adequate treatment might arrest and even cure the disease.

Periodic health examinations, by disclosing the lesions of syphilitic heart disease in its early stages, and systematic treatment would probably prevent serious damage to the heart. Thus if a proportion of this rapid increase in heart disease is found to be due to the syphilitic type, there are known preventive measures and a recognized treatment.

Syphilitic heart disease constitutes a serious problem, for its symptoms make their appearance during the most productive periods in a man's life, that is, between the fortieth and sixtieth years.

Further information is needed concerning the progress of syphilitic heart disease during the latent period.

RHEUMATIC HEART DISEASE

In the studies mentioned, rheumatic heart disease constituted from 25 to 35 per cent of the total. Moreover, it is probably no exaggeration to state that from 1.5 to 2 per cent of the children and young adults in New York City have rheumatic heart disease. Since it is principally an affection of children and young adults, which seriously cripples many of them, our interest is directed particularly to it.

What is the nature of this disease? Until recently, rheumatic fever was regarded generally as having arthritis or inflammation of the joints as its principal manifestation. When heart disease occurred it was considered a complication of the joint inflammation. However, rheumatic fever is now commonly regarded as a general infection, which when it invades the joints causes polyarthritis or "inflammatory rheumatism"; when it lodges in the brain it causes chorea or St. Vitus' dance; and when it involves the heart, it causes rheumatic heart disease. Other evidences of this rheumatic infection may be tonsillitis, muscle, joint or "growing" pains, torticollis, or wry neck, and certain skin conditions known as rheumatic nodules, purpura, and various erythemata.

Rheumatic heart disease is primarily a disease of children and young adults. It is rare after 50 years of age, and the majority of

cases occur before the age of 30. Rheumatic fever usually shows itself in youth as pains in joint or muscle, St. Vitus' dance or inflammatory rheumatism. The heart is often affected simultaneously or just following these ailments. More important still the heart may be the first and apparently the only structure involved, so that there may be present rheumatic heart disease without any other evidence of rheumatic fever.

This is a chronic disease with no definite course, but rather an extremely variable one. Some cases are immediately fatal; some are characterized by more or less continuous active heart infection from first infection to death; some have alternate periods of activity and latency; and some have an initial active period of heart infection and then becomes apparently inactive for a long period of time.

It is thought that rheumatic fever and its various manifestations are caused by a germ, although the exact organism is not known or proved at present. Furthermore, since many attacks of rheumatism are preceded by attacks of tonsillitis, it is believed that the germ causing rheumatism may enter the body through diseased tonsils. Other portals of entry may be decayed teeth or diseased gums, although this is not proved. It seems logical, therefore, that every possible means should be employed to keep tonsils and teeth healthy. If they become infected they should receive appropriate treatment so that germs from these sources may not enter the body.

It is well known that patients with rheumatic heart disease are susceptible to infections of all kinds. Mild infections such as bronchitis, sore throat or "cold," have a bad influence on this type as well as on all other forms of heart disease. Therefore, patients suffering from heart disease should be advised of the value of oral hygiene and the danger of colds, sore throat, and infections.

There are many other factors which demand attention, such as the seasonal variation and family incidence of rheumatic heart disease. One is often impressed with the occurrence of rheumatic heart disease in more than one member of the same family. Many observers have called attention to this. Is there a direct infection from one member of the family to another? If so, measures of isolation such as those employed in the contagious disease should be instituted.

Again it is important to know the incidence of rheumatic fever in our communities and the frequency with which the heart is affected in these cases. Should rheumatic fever be made a reportable disease?

RELIEF OF HEART DISEASE

Considerable knowledge is available at the present time concerning the immediate relief of the symptoms produced by heart disease. This

is demonstrated daily in clinics and practice and it is not my purpose to discuss the treatment of heart disease. But what is known of the end results of treatment, of cardiac vocational guidance and careful social service follow-up? Certainly much is yet to be learned. Furthermore, much more information is needed as to the natural or life history of the different types of heart disease, their respective durations and the effect of remedial measures on their course.

Further study is necessary covering the numerical distribution of heart disease in different parts of the country and the proportion of the various types of heart disease. How many cases are due to infection and how many belong in the degenerative or old age group? What is the effect of treatment on their duration? Is the duration modified by differences in social and economic environment? by convalescent care? and by vocational guidance? Have diseases of the tonsils and teeth a bearing on the incidence of rheumatic infection? What is the direct cause of rheumatic fever?

There is need for carefully collected data dealing with the convalescent care of cardiacs in order to evaluate properly its importance. There is a need for information showing how much and what types of work children with heart disease can do.

The value of careful social service work among cardiac patients is fully recognized, but further study and the collection and critical analysis of more data are necessary before its importance can be fully evaluated.

It is appreciated that the collecting of data is a laborious task, and that the tabulation of those data is still more laborious; but we should appreciate that it is a means at the disposal of all clinic workers, social workers, nurses and physicians of increasing our knowledge of the problem of the prevention and relief of heart disease.

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The Preparation of Acidophilus Milk

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INTESTINAL toxemia and sour milk therapy are subjects that are far from being on a scientific basis. But it has been demonstrated, at any rate, that milk containing lactic acid is more readily digested than "sweet" milk, whether the acid is a result of bacterial activity or a result of the addition of U. S. P. lactic acid, as is the custom in preparing infant feeding formulas. Furthermore, it has been demonstrated that it is possible under certain conditions to implant the acidophilus type of bacillus in the lower intestinal tract of both man and animal to such an extent that it predominates over all other types. No doubt, too much has been claimed for sour milk therapy; yet there is a preponderance of evidence to support the view that the *B. acidophilus* culture may be employed in such a way as to have therapeutic value.[1]

In order to have therapeutic value, the culture must contain enormous numbers of bacteria. James[2] has shown how the average commercial culture falls down in this respect. A large amount of the culture should be taken daily; and lactose or dextrin or some other carbohydrate that is rather slowly absorbed should be fed at the same time.

The kind of culture most satisfactory for supplying the acidophilus organisms in large numbers is a freshly prepared milk culture. Tablets, candies and emulsions have not received the unqualified approval of the Council on Pharmacy and Chemistry,[3] and any broth culture which has been kept at a refrigerator temperature cannot contain many virulent organisms on account of the fact that they die out rapidly at low temperatures. In a few cities acidophilus milk may be purchased for from $.50 to $1.00 a quart, but it is generally not available at all even at such a price. However, by observing a little care it may be prepared in the home at a very low cost.

The Milk Supply—To start with, the milk must be free from those bacteria which naturally occur in fresh milk. This can be attained by boiling ordinary market milk for a long time, but it has been found that unsweetened evaporated milk is particularly suitable for this purpose. It can be obtained from the grocer at a fair price, can be kept on hand

always ready for use, and it is certainly sterile. Evaporated milk has been sterilized under rather high steam pressure (about 11 pounds); this is sufficient just to begin to caramelize the milk. Kopeloff [1] has shown that when milk is autoclaved to a "light caramel color" the acidophilus organism grows more rapidly in it than in milk heated to a lesser degree.

The Starter Culture—It is now possible to obtain a pure broth culture of *B. acidophilus* at, or through, all drug stores. The product of a reliable manufacturer should be specified. One culture which we obtained proved to be *B. bulgaricus* though it was labeled "*B. acidophilus*."

The Control of Temperature—The acidophilus organism grows best at 90° to 105° F. It exhibits less growth at lower temperatures, though it has been found that the organism produces acid at a considerable rate even at room temperature. (Four observations showed an average increase of 0.65 per cent lactic acid in 24 hours at 68° F.)

Milk that has been inoculated can be warmed to 100° to 105° F. and transferred to a thermos bottle where it will maintain a temperature high enough to permit very satisfactory growth in 15 to 24 hours. The rate at which the temperature falls off depends upon the quality of the bottle and also, of course, on the temperature of the surrounding air. But it has been found that beginning with a temperature of 100° F., a quart thermos bottle of average quality will permit the temperature to drop no more than 10° to 15° in 24 hours. Such temperatures are found quite satisfactory for the rapid production of acidophilus milk.

The Procedure—Carefully clean a quart thermos bottle by allowing it to stand over night full of water containing some washing powder or a little household ammonia; then scald it. Place the cork, a can opener and thermometer in a pan and pour boiling water over them. Wipe the top of a one-pound can of evaporated milk free from dust and pour boiling water over it. Open the can and pour contents into the pan that has been scalded. Fill the can with boiling water and pour into the evaporated milk. Immerse the pan in cool water and stir the mixture with the thermometer until the temperature comes down to about 105° F. Add 2 or 3 ounces of commercial *B. acidophilus* culture, mix, and transfer to the thermos bottle. (The temperature should now be between 100° and 102° F.) Cork and let stand for 24 hours, or until the milk has acquired a pleasantly sour taste. When this is attained, transfer to a clean milk bottle and place in the refrigerator.

Succeeding cultures of acidophilus are prepared by using about a teacupful (6 ounces) of milk culture previous made to inoculate the

diluted evaporated milk for the next run. Proceeding in such a manner, it will be found that acid is produced at a more rapid rate than when the first quart was prepared using the commercial broth culture as a starter. Thirteen to 17 hours is now quite sufficient. If fermentation is allowed to proceed for a longer time so much acid is developed that the taste becomes unpleasantly sour.

After a little experience one may stop the action of the bacteria at any desired degree of sourness. This is effected by merely transferring the milk to a clean glass bottle and placing in the refrigerator. It is perfectly safe to keep the culture at room temperature, but, as has already been mentioned, a considerable increase in acidity may be expected. This is of little consequence, however, if the product is consumed within 24 hours. On the other hand, if the milk is kept in a refrigerator it should be consumed within 48 hours for the reason that the organisms rapidly die out at such low temperatures.

One or two tablespoonfuls of lactose or dextrin may be added to each glass of milk consumed, though the pleasant tart taste of the sour milk is to some extent injured by this addition. Most people prefer to take the carbohydrate separately.

Typical acidophilus milk has a fine grained curd. It is rather viscous, especially at low temperatures, but not "stringy." It does not develop so high an acidity as is produced by the *B. bulgaricus*. When a culture becomes rapidly very sour or bitter and is extremely viscous so that when poured from a bottle it runs out in strings, it is an indication that the culture used was *B. bulgaricus*. This should be discarded and a new commercial culture obtained from a different source. At any time when souring does not seem to be taking place normally a new start should be made.

The nutritive value of this product is exactly the same as that of ordinary cow's milk. Evaporated milk is whole cow's milk evaporated down to one-half its bulk. Therefore, by diluting a can of it with an equal amount of water the composition will be the same as that of normal cow's milk. The evaporated milk flavor, which is objectionable to some people, is scarcely noticeable in acidophilus milk prepared from that product.

Some Experimental Results—A large number of milk cultures have been prepared in thermos bottles on which observations have been made of the influence of (1) the amount of old culture used for inoculation, (2) temperature at beginning of fermentation, and (3) length of time during which fermentation is allowed to proceed. Table I shows the influence of these variables upon the rate of acid development, which is to some extent a measure of the viability of the culture.

TABLE I

INFLUENCE OF AMOUNT OF INOCULATION, TEMPERATURE OF STARTING, AND TIME, ON THE AMOUNT OF ACID PRODUCED BY *B. acidophilus*

Amount of Culture	Temperature	Time in Hours	Per cent Lactic Acid Produced
3 oz. (⅜ cup)	102°	17	0.77
6 oz. (1 cup)	102°	17	0.92
9 oz. (1½ cups)	102°	17	1.01
6 oz.	99°	17	0.88
6 oz.	102°	17	0.92
6 oz.	105°	17	1.07
6 oz.	102°	9	0.68
6 oz.	102°	13	0.85
6 oz.	102°	17	0.92

It has been found that acidophilus milk has its best flavor at 0.8 to 1.0 per cent lactic acid. The result of these observations led to the conclusion that the best results are obtained by the use of about one teacupful of old culture to inoculate one quart of diluted evaporated milk, starting the fermentation in a thermos bottle at 100° to 102° F. and allowing the fermentation to proceed for 13 to 17 hours. For the first inoculation, however, where the commercial broth culture is used, fermentation should be allowed to proceed for 24 to 27 hours.

The fact that the commercial culture is much less active than the prepared milk culture when used for inoculation shows how much greater must be the therapeutic value of the latter.

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Salem Sewage Plant

SALEM proposes the second activated sludge plant to be built in Ohio, following closely on the Elyria installation. Plans for the Salem plant were approved in June. The plant is a typical one, comprising presedimentation; aeration by air diffusion with horizontal spiral flow; and separate sludge digestion of mixed fresh and excess activated sludge. F. S. Barckhoff, city engineer, designed the plant, with the assistance of C. C. Hommon, biologist and chemist.

Making Cities Livable

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DURING the country's entire history American cities have grown in haphazard fashion, mixing varnish factories, paint shops, slaughter houses indiscriminately with residence neighborhoods, allowing the development of congestion and potential slum areas to go on with little check. Now, within the short span of 10 years, more than 550 communities have adopted zoning to protect themselves against these developing evils. No doubt because of the very acuteness of its problems, New York, in which zoning was a more complicated and difficult matter than in probably any other city in the country, was the first to undertake zoning.

Although a pioneer in this movement, New York's zone plan has served as a valuable example to the rest of the country. Too much praise cannot be given to the intelligence and wisdom of the group of men who were responsible for the formulation and the enactment of the New York Zoning Law. To take a city the size of New York and divide up its enormous areas into business, residence and industrial zones, and to determine height limitations and open space requirements for these zones was a great task. To have done this in a way that was accepted as sound by building and real estate interests and that has proved, by experience, to be in error in a comparatively small number of cases, was a monumental achievement.

One of the most remarkable things about it has been the fact that not a single case affecting the constitutionality of the New York law has reached the courts. This has been due in no small measure to the wisdom of the promoters of the law in creating a board of appeals with power to vary the strict letter of the law where necessary to prevent unnecessary hardship. Naturally in a city where the land values are among the highest in the world, many compromises had to be made with economic necessity. The standards set are not high enough to protect the outlying districts adequately and they fall far short of being safe for other communities to follow, but nevertheless to New York go the laurels for having established the principle that a city can regulate its building development for the welfare of its citizens.

What it is going to mean to America 50 or 100 years from now to have our cities developing in orderly fashion, with ample space for sun-

light and air in the buildings in which we live and work, and play space for children, should appeal to the imagination of the health worker. The men who have fought the intelligent, persistent battle which has convinced community after community of the need of zoning and who have helped to gain the support of the courts have made a great contribution to the health, comfort and general welfare of our city populations of the next generation. Belief in the importance of zoning to health has been one of the most influential factors in the rapid advance of zoning, and yet it has been a difficult factor to establish because of the lack of conclusive scientific evidence.

The social factors bearing on health are so many and so interrelated that it has not yet been found possible to separate completely the effect of physical environment from such influence as income, race, education and medical service. Nevertheless, fortunately, all the evidence we have from experience and observation makes a case strong enough to have convinced legislators and courts. The city which provides adequate open spaces for all buildings in which people live and work, checks excessive congestion, and keeps objectionable industries out of residential neighborhoods, should certainly be more healthful than one with the haphazard building development that has characterized the typical modern city.

There is little doubt that the time will come before many years when we shall have scientific data to prove our case conclusively. Meanwhile practical considerations indicated that, rather than go on piling up trouble for ourselves in the future, the sensible thing to do was to act upon the evidence provided by our experience and by the testimony of competent people, and proceed to attack the problem without waiting for more scientific data.

Certainly there can be no question that when we build hospitals and sanatoria for the sick we build them with ample open spaces to insure an abundance of sunlight and fresh air. No one would advocate that, pending the producing of conclusive evidence to the contrary, we should put these institutions in congested areas with no thought of sunlight and air. If these considerations are important in nursing the sick back to health they are no less important in maintaining the health of all.

Nothing in the modern progress of medical science has been more important than the proof of the value of sunshine. If sunshine will both cure and prevent rickets, if it is a great aid in the treatment of tuberculosis of the bones and joints, if it is helpful in building up vitality and resistance to disease in children and in adults, then we have a strong argument for controlling city development in such a way as to

prevent congestion and guarantee open spaces sufficient to permit some sunshine to enter. So strong is the case for the value of the sun's rays that the day is probably not far distant when we shall require all residences to be so oriented as to provide the maximum of sunshine in living rooms and when we shall require in new buildings window glass that will not screen out the ultra-violet rays.

More is known about ventilation than ever before. The fundamental requisites are motion, temperature and the proper amount of humidity. For schoolrooms modified window ventilation has proved to be the most desirable of all known methods. The adequacy of open spaces surrounding structures will certainly play an important rôle in determining whether these air conditions can be provided. Obviously, the room facing on a narrow court will have little air motion and in summer will have an excessive temperature.

The fact that those sections of a community in which the infant mortality and the death rates from tuberculosis are highest are usually those in which the congestion is greatest and the open spaces least, furnishes strong evidence that these conditions are factors perhaps of equal importance with low income, race and education. A recent study of infant mortality in Cincinnati has shown among other things that in the wards having the highest density of population the death rate among children under 1 year of age is appreciably higher than in the others. Drolet in his study of tuberculosis among the Jews of New York City produced facts indicating that while there is a distinctly favorable racial resistance to this disease, it is significantly more deadly in the congested tenement areas even though the economic status is not greatly different.

Where any factor so consistently accompanies high death rates from this disease, the presumption is strong that it cannot be eliminated as a cause. There has been a strong tendency to discount the influence of physical environment because of the fact that, without any great change in environment, it is possible to reduce mortality by means of improved medical and nursing care, education, better nutrition and other methods used in the modern health movement. This view, however, overlooks the fact that this improvement is made in spite of the environmental handicap and with no knowledge of the extent to which bad environmental conditions definitely limit the extent of our progress in the poorer city districts, or how much greater the results might be if the physical surroundings could be transformed.

It is noteworthy that Seattle, Wash., which stands among the highest of all cities in its percentage of home ownership, is among the lowest in infant mortality rates. Dr. Leonard Hill, the noted English

authority in his book *Health and Environment,* points out that in England "rural districts still maintain the relative advantage over town districts which held in the olden days," despite the enormous amount of health work in cities.

The effect of permitting the intermingling of business and industry with residences is certainly not conducive to health promotion, though its ill effects do not lend themselves to ready measurement in terms of vital statistics. We must not lose sight of the fact that the goal of the public health movement is not alone the prevention of disease and premature death. Our objective is positive health building—achieving such robust health, mental and physical, as will make life enjoyable to its fullest extent. It would be an unusual person indeed who would argue that this objective is fostered by the congestion, noise, odors and smoke of the modern city. Smoke in particular is an evil which accompanies the business and industrial districts to an extent that is unnecessary in home neighborhoods. Smoke interferes with the sunlight, and deprives a community of a great deal of the beneficial sun's rays that it would otherwise have. Dr. Leonard Hill, in his book previously referred to, says:

> The great medicinal value of sunlight in a cold climate is only very slowly being recognized. In some districts in England, owing to smoke, people in certain localities receive 50 per cent less actinic rays of sunlight than others only four miles distant from them.

The committee on Public Health of the New York Academy of Medicine in a statement published in the bulletin of the Department of Health of New York City on February 27, 1926, states, that it "viewed with great concern the health hazard which has been created of late by the continual, and to a large degree preventable, discharge of dense smoke into the air." The interference with the beneficent action of the actinic rays of the sun by the all-pervading smoke is detrimental to health, particularly of children. As time goes on we shall learn more and more in the way of definite facts regarding the detrimental effect of these things upon health, comfort and efficiency.

Keeping business and industry out of residential districts and increasing the size of open spaces greatly reduces the danger of fire and the resultant probability of injuries and deaths due thereto. The 1925 *Fire Prevention Year Book,* published by the Baltimore Underwriters, states that the fire hazard is almost seven times as great in buildings used entirely for business as in buildings used entirely for residences.

Leading psychiatrists and neurologists have testified that the protection afforded to residential districts by means of zoning is beneficial

to mental health. Horatio Pollock, statistician of New York State Hospital Commission, has shown that mental disease is much higher in urban than in rural districts of New York State. "The man of the rushing nerve-racking city is most likely to become insane," says Dr. Pollock, "while the woman of the more placid country district has the best chance of not suffering from mental disease."

Regardless of the dearth of incontrovertible scientific data on the relation of zoning and housing to health, few will challenge the conclusion that the city of the future which provides better housing, eliminates congestion, guarantees a reasonable amount of light and air for all buildings for human habitation, and keeps business and industry out of residential districts, is making for the day when people on the whole will enjoy more complete health. It is these considerations, along with evidence and testimony showing the relation to safety, to traffic congestion, to morals, to the cost of city utilities, and to convenience and economy in transportation, that have led the courts to declare zoning legal.

The past ten years have been crucial ones for the cause of zoning. At no time has there been any certainty that the courts would not yield to the cry of "taking property without due process of law," and deprive all cities of the benefits of zoning. Hundreds of cases have been heard, and step by step the case for zoning has been strengthened until now there is no longer any doubt of its validity. A reading of the many excellent opinions that have been handed down shows how strongly the health arguments have influenced the courts.

Edward M. Bassett of the Advisory Committee on City Planning and Zoning of the Department of Commerce, and one of the great leaders in the cause of zoning from the beginning, has prepared a statement recently published by the department entitled "Zoning Progress in the United States," in which he gives the present status of zoning from the legal point of view. Zoning was a wide deviation from anything that had been done in the past, affecting as it did every parcel of land existing in the community, setting a standard as to the use to which the land might be put, the height to which the buildings might be erected, and the open spaces required around them. It was a momentous thing for the judiciary to declare so radical a measure constitutional. The fact has been recognized, however, that the development of the large city has brought with it dangers that necessitate an entirely new type of regulation to prevent city conditions from becoming intolerable.

Zoning is done under the police power, which is that right of a community to enact necessary laws and regulations without having to

compensate the owner for any adverse effect he may believe such regulations may have upon his property values. Regulations adopted under the police power must be reasonable, must be applied equally, and must be based upon the health, safety, morals and general welfare of the community. Zoning has definite limits and Mr. Bassett points out that the community which attempts to zone without recognizing these limitations is very likely to find its zone plan invalid.

1. It is necessary that there be a state enabling act granting to communities specifically the power to regulate the height, bulk and use of buildings, the size of courts and the density of population.

2. There must be a careful scientific study of the needs of the community, public hearings and comprehensive and impartial application of the regulations.

3. There must be requirement of more than a majority vote of the council to effect changes after written protest of property owners.

4. There must be provision for a board of adjustment with power to vary the strict letter of the law and the maps, to avoid unnecessary hardships.

The constitutionality of zoning based on an enabling act and having due regard for these essentials has been upheld by the courts of every state where it has been tested except in New Jersey and Georgia. The most important decision ever rendered on the subject was that handed down in 1926 by the U. S. Supreme Court in the Euclid Village case. In that important opinion, almost every phase of modern zoning was referred to, and the court made it clear that intelligent, reasonable and systematic zoning is a proper exercise of the police power. With more than 30 million people, comprising over 55 per cent of the urban population, already protected by zoning, it certainly will not be long before every sizable municipality in the country will be included in the list. Few measures so drastically affecting property rights on the one hand and human welfare on the other have made such rapid progress.

Establish New Quarantine on Mussels

EXAMINATION of mussels, made recently by Dr. K. F. Meyer, director of the Hooper Foundation for Medical Research and consulting bacteriologist of the California Department of Public Health, has determined the presence of a toxic condition in these crustacea. A quarantine order was issued immediately upon the determination of these findings. The general public is warned to beware of eating mussels taken from the coast district specified in the quarantine order.

The Place of the Nursery School in a Public Health Program*

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THE value of schools for young children has long been recognized in certain countries. In Belgium, as early as 1833, official recognition was given to such schools, and in 1905 there were 2,711 schools in that country for children from 3 to 5 years of age. These schools accommodated 258,149 children, a number probably representing half of all children of these ages in the country.

In France also the need for such schools has been admitted. The first school in France for children under 5 years of age was founded in 1771. In 1897, about 25 per cent of the children from 2 to 6 years of age in France were attending school. In 1904, there were 217 schools in Paris for children from 2 to 6 years of age. These institutions were educational, though probably not to the extent that we now expect them to be.

The first English nursery school was opened in London in 1900. Only a small number of nursery schools were established in England before the war, although the subject had received thorough and favorable consideration, as evidenced by the voluminous report published in 1908. In 1918, the Fisher Act provided for the establishment of nursery schools in England, in connection with the national education system. Their growth was somewhat retarded, however, by post-war conditions, and especially, economic conditions.

The educational advantages of the nursery schools have been widely discussed, and they are now well established, but the physical advantages, though even more evident, have not been discussed in the literature.

It is a well-known fact that most children reach the age of 5 or 6 years with physical defects which need correction. Many of the defects are so serious that the children are classified as abnormal. Yet medical literature gives abundant evidence that many of these defects are preventable. Therefore, medical practice with children has assumed, to no small extent, a preventive rôle.

The purpose of such preventive work is twofold—to develop proper

* Read before the Wayne County Medical Society, Detroit, Mich., March 27, 1928.

habits, and to give remedial attention at the proper time. Proper remedial care will prevent the development of more serious defects. It frequently consists of correcting improper habits. Proper food is a necessary corollary to the developing of proper habits. The early development of good food habits is generally admitted to be of great value; yet it is not uncommon to see clinic children whose families cannot afford to give them an adequate diet. Moreover, the indigent family and the family of moderate or good circumstances have given little real study to the preparation of the dietary and its presentation to the child. It is unusual, in fact, to find a family which has given thorough consideration to the proper methods of child care. Such a condition may be explained partly by failure to recognize the importance of early training; partly by ignorance, poverty, and lack of proper personality; and to a considerable extent by the conditions of city life, which necessitate living under conditions which make good child training impossible.

We believe the nursery school offers the best means of solving these problems, which are really public health problems.

Let us consider for a moment the objectives of the care and training of young children. They may be summed up as follows:

To offer a proper environment for physical welfare, growth, and development.

To offer opportunity for the best mental and social development.

To offer opportunity to make as many judgments as possible.

To offer as many educational opportunities as possible, that is, opportunities to learn how to do new things, things the child did not know how to do.

These objectives necessarily dovetail to some degree, since the final aim is an environment that gives opportunity for all-round development. If these objectives are approved, and it is admitted that the nursery school, combined with a program of parental education, may go far toward meeting them, we shall be asked for the group of children to which the nursery school will be advantageous.

It is too early in the history of the nursery school to say that it is the best place for all young children. However, it is safe to say that it would be advantageous to many children who do not now have its benefits, and that it would be of great value to practically all the children of the poorer classes and to many from the better classes of society. I believe that the nursery school is the best method yet proposed for caring for a large proportion of the children of large cities, and that the movement should be extended to accommodate such groups.

It is equally true, however, that the extension of this service must necessarily be slow. Nursery schools should not be established until properly qualified teachers and staffs are available. The need for such

restriction was recognized in the English report of 1908, which has the following statement:

> The committee deprecate very strongly the idea which appears to be prevalent that any teacher is good enough for infants. They hold, on the contrary, that the care of these young children presents difficulties at least equal to those which arise in teaching the older ones, and the infant teachers should be selected with scrupulous care. . . . . In the case of normal children more good can be done by education between the ages of 3 and 5 than at any subsequent period of 2 years; and experience shows that attendance at school before 5, even under the present conditions, undoubtedly helps in the great majority of cases the subsequent education.

Nursery schools should not, then, be organized more rapidly than proper personnel is available. The nursery school staff should have proper training and experience, favorable personalities, and should be free from any disease that would be a hindrance in the work.

The advantages of the nursery school are numerous, and though we are considering them chiefly from the point of view of physical welfare, it is true that the physical, mental, and social life and development of the young child are so interrelated that they cannot easily be thought of separately. The following are some of the advantages:

It provides an opportunity for parental education. Whether we are considering nursery schools, summer camps, clinics, or other health procedures for children, unless the parents are shown the value of the régime and coöperate with it, much of the effort is wasted. The American nursery schools have definitely included parental education as a part of their program.

The nursery school relieves the mother from the care of the child for a part of the time. This advantage is an important one from several points of view. That this very relief lessens parental responsibility and is therefore undesirable is a favorite point for critics of the nursery school to dwell upon. However, the nursery school does not take the child away from the mother for so long a time as some assert, and placing the child in the nursery school, when there is a program of parental education in connection with the school, actually increases the sense of parental responsibility. The objective of the nursery school is to supplement, guide, and indicate parental responsibility, not to replace it. It might easily be shown that the mother who has a few hours apart from the child each day for undivided attention to her other duties gives more and better planned time to the child after he returns from the nursery school. The busy child at home gets in the busy mother's way, and too many commands are necessary. The results are not the best for either the mother or the child.

In the home, the little child is not usually the most important consideration in making plans for the day, as he is in the nursery school.

In the nursery school, a teacher well trained in methods of dealing with young children is always present to give guidance when it is needed. She is better able to deal with the child's problems than is the mother, in most instances.

In the nursery school, the child is in an environment planned to meet his needs, with the proper equipment and materials available. Here he can make and carry out his plans, which is conceded to be an important part of the education of the young child, without undue interference. He has other children to play with and learn from. He learns how to live in the group and how to give and take. The equipment for both outdoor and indoor play is selected by competent people, to allow the best opportunity for the development of muscle and muscle coördination, and general body and mind control. It is, of course, more adequate than the equipment most homes can afford. The child in the home quickly outgrows toys and play equipment. The equipment in the nursery school is not outgrown, for the children there are always from 2 to 5 years of age.

It will be conceded that the child should have a maximum amount of free play in the open air. It will also be admitted that many city homes do not have facilities for outdoor play, and that, when they do, the mother is often called upon to follow or worry about every movement, with a result that could hardly be called either free play for the child or enjoyment for the mother. At the nursery school, plenty of space for outdoor play, as much time as weather conditions permit, play equipment, companions of the same age, and adequate supervision, are provided.

When lunch time comes at home, the mother is often busy, and sometimes has not planned the meal ahead; therefore, it is likely to be inadequate for the young child. In the nursery school, the meals are planned ahead, as the chief consideration is the welfare of the child, and the nursery school dietary furnishes those things most likely to be insufficiently represented in the home diet. Further, as it is generally considered best for the young child to have his main meal at noon, the nursery school provides this meal, carefully planned and selected, and the home coöperates by giving the child a breakfast and dinner complementary to this lunch. The nursery school teaches good food and health habits through example and practice, and the "social pressure" exerted by the other children makes the teaching of health habits easier than in the home.

In *The Normal Child—Its Care and Feeding*, Alan Brown makes the following statements:

> The food suitable for the second year of life and the method of its preparation and administration are subjects upon which the masses are most profoundly ignorant. A few children at this period of life are underfed, but the great majority are overfed: they are carelessly given, at improper intervals, unsuitable food, wretchedly cooked. . . . .
>
> With many children this expansion of the diet list is attended with considerable difficulty. They are thoroughly satisfied with the milk and refuse all other forms of nourishment. In such cases time and patience are necessary at feeding time. . . . .
>
> A child should never dine with adults until he can have an adult diet, if circumstances of the family will permit him to dine alone or with other children. It is a species of cruelty to expect a hungry child of tender age to sit at the table, see and smell fragrant dishes, and be forced to content himself with his restricted fare without complaining. . . . .
>
> It may be safely said that a well, vigorous child is a hungry child; and nearly every child may be made thoroughly hungry three times a day by giving suitable foods at proper intervals. The children who come to a physician for poor appetite without evidence of disease to account for it are, almost without exception, improperly fed. They are often given unsuitable food at mealtime, when they are loaded down with sweets and pastries; but the chief error is eating between meals. This habit has ruined more appetites and has been the cause of more stomach disorders than any other one factor. . . . .
>
> Children who overexert themselves at school or at play, or who are easily excited and have plenty of opportunity for excitement, often suffer from loss of appetite. The management of these cases is to remove the source of the trouble, whatever it may be. An excellent means is an enforced rest for one and a half hours after the noonday meal.

Dr. Brown is quoted at length because the problems he discusses are so fitted for nursery school attention and because the nursery school has been so successful in dealing with them. Moreover, these problems are preventable if proper care is taken early. A properly ordered nursery school teaches habits that prevent these undesirable practices. If established, such habits yield better to the nursery school regime than to any other method of treatment.

Regular physical examinations and physical measurements, as well as measurements of mental and social progress, are a part of a properly conducted nursery school program. Such measurements need not be sufficiently elaborate for research purposes, but must be sufficiently thorough to show the course of development the child is taking.

The importance of the nursery school as a center for a public health program with young children is indicated by the fact that the English nursery schools were developed because of the health advantages to the children, as pointed out by Sir George Newman, Chief Medical Officer of Great Britain. The English nursery schools were established in an attempt to solve the problem presented year after year by the many children entering the elementary schools with defects of health apparently developed during the preschool years. During the 1926-27

school year, the Detroit Department of Health examined 26,878 first grade children.[1] Of these children, 64.6 per cent were found to have one or more physical defects. If one may assume, as seems reasonable, that this condition is representative of the country at large, the importance of attacking health problems during preschool life, in this country as in England, is evident.

In the United States, the primary purpose of the nursery school has been to develop an institution that helps parents in caring for and directing their children, as well as to supply an environment that offers the child the best possible opportunity for an all-round development, physical, mental, and social. Nursery school history in this country is of less than 7 years' duration. Its growth has been satisfactory. Close association with the universities of the country has kept the standards high and encouraged an attitude of investigation for the best methods of development. The leaders in the field believe that the increase in the number of nursery schools should be as rapid as trained personnel becomes available, but not more so.

From experience covering 6 years, the staff of the Merrill-Palmer School believes that the nursery school offers the best method of dealing with the greater proportion of children from 18 months to 5 years of age. They believe that it is the best place to develop proper habits and that it gives the best opportunity for physical and mental growth and development. Because of these advantages, the medical profession should be familiar with the opportunities the nursery school offers as a foundation for a public health program with young children and the parents of young children.

REFERENCE

1. *City Health*, Bulletin of the Detroit Department of Health, Jan., 1928.

Tuberculosis Directory Published

HELPFUL to directors of local health departments and private health agencies is the Tuberculosis Sanatorium and Association Directories, recently published, which lists 1,454 organized state and local associations and 282 special committees which assist in the various phases of tuberculosis work. This directory is available from the National Tuberculosis Association, 370 7th Avenue, New York, N. Y.

Nutrition Experiments in the Schools of Winston-Salem, N. C.

ELEANOR WHITTINGHILL

Nutritionist, Department of Health, Winston-Salem, N. C.

THE aim of our nutrition program has been to prevent unnecessary illness and to increase the efficiency of the human body by teaching nutrition and its relation to health in such a way that the child will appreciate its value and be able to practice it intelligently in the home. We chose animal experiments to stimulate an interest in the effect of good and poor nutrition. The Home Economics and Physical Education Departments coöperated with the City Health Department in conducting these experiments.

Our purpose in conducting these experiments has been to show the effect of special foods on the growth and health of young rats and thereby stimulate in the child an interest in his own well-being. The foods and drinks used represented some of those generally used by the children of this city—coffee, candy, milk, lettuce and soft drinks.

White rats, cages, a pair of accurate scales measuring in grams, and other necessary equipment were provided. The Home Economics Department seemed to be the logical place for the rats to be kept, because of the accessibility of food and water and because of that department's interest in nutrition.

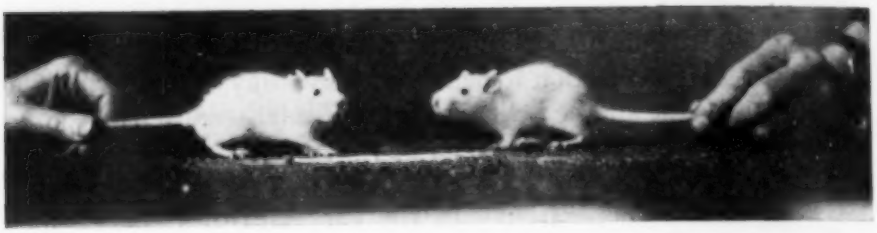
A list of instructions was placed in the hands of each home economics teacher, relative to the kind and amount of each food to be used for each group of rats per day. Their basic food consisted of white corn meal and salt, (5 cupfuls of corn meal to 1 tablespoonful of salt). The "special" foods: milk, coffee, soft drinks, sugar and lettuce, were fed in amounts that could be disposed of readily, only one "special" food being used at a time.

RATION

Coffee	2 tbsp. per rat per day
Soft drink	2 " " " " "
Milk	2 " " " " "
Lettuce	About 15 gm. per rat per day
Candy or sugar	3 " " " " "
Meal	All they could use

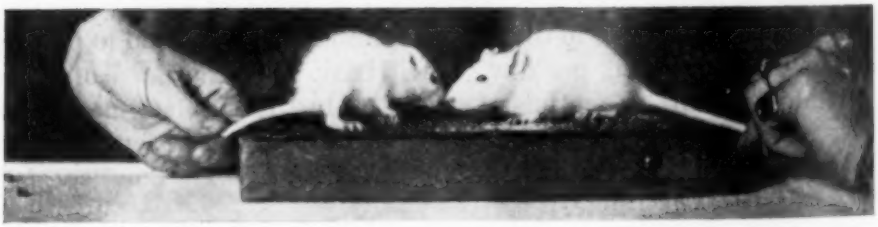
Once each week each group of rats was weighed. These weights were recorded on posters (made for the purpose), and kept on the bulletin board in the hall, where all of the children could read them.

LETTUCE		MILK	
94 gm.	125 gm.	86 gm.	166 gm.



COFFEE		MEAL	
93 gm.	94 gm.	85 gm.	106 gm.

SUGAR		MILK	
99 gm.	91 gm.	86 gm.	166 gm.



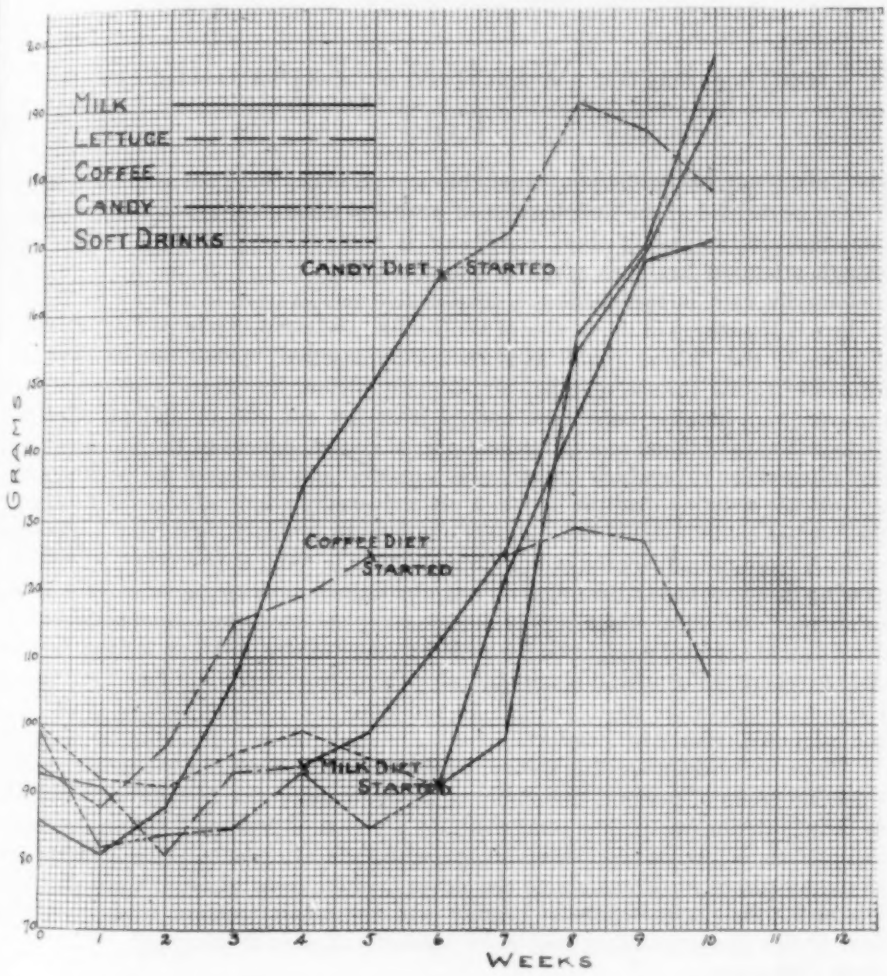
SOFT DRINKS		MILK	
100 gm.	91 gm.	86 gm.	166 gm.

Just to show the effect of food on the growth and health of young rats would not be so important in itself; but the child quickly applied to himself what he had learned. One child remarked: "Now I see the value of this; you are showing us what good nutrition will mean to us." The interest was keen and the value of the experiment was proved when the children began to change their habits in eating. In many

instances milk took the place of coffee, candy was reserved for after meals, lettuce and salads became more popular, and fewer soft drinks were purchased.

The following graphs represent the weight in grams, per week, for

WEIGHT IN GRAMS PER WEEK FOR PAIR OF RATS



the pair of rats. The rats' response to the change in food is also represented on the graph. Note the immediate increase in weight when milk is added and the decline in weight when coffee is added.

All of the rats were 4 weeks old when the experiment began. They were from the same family and had the same treatment. At the end of 6 weeks on "special foods," the pictures were made. The weights are for two rats of like experiment, made at the beginning and at the end

of the 6 weeks' experiment. (Only one rat from each experiment is shown in the pictures, that a comparison may be made, with one fed on milk or on some other food.)

Animal experimental work stimulates an interest in personal well-being.

A Heating Factor Which May Explain the Winter Cold

IN a restricted, but at the same time, the most generally accepted sense, ventilation may be defined as the maintenance of healthful atmospheric conditions. A most important factor among these conditions is that of temperature. Perhaps not enough attention has been given to the source and nature of the heat which is customarily used in maintaining a comfortable temperature in the winter season. If there is something in the matter of ventilation, and particularly heating, that predisposes to the "winter cold," as is commonly asserted, may it not be the usual forms of heating themselves—hot air furnaces, steam, hot water, coal stoves, and the like, and, because these emit energy from but one end of the spectrum, the dark heat rays"? Such sources of heat are, of course, devoid of the shorter visible and ultra-violet rays which characterize sunshine and daylight, the health giving and disease resisting qualities of which are universally admitted. In short, perhaps the "winter cold" is due to too constant exposure to a "partial spectrum"—the long rays. A truly radiant source of heat to maintain the room temperature, such as the glowing fireplace, the radiant electric coil, the radiant type of gas stove, etc., or the campfire of old, all of which supply a quite complete spectrum—comparable to the sun's rays at sea level—might be the answer to the "winter cold," or, it might be possible to secure the beneficial results by using the present sources of heat for bringing the room temperature up to 50°-60° F. and using the "radiant type of heater" for the balance necessary for comfort.

To prove or disprove this theory, would require, it seems to the writer, a considerable group of persons, preferably of all ages, and under 24-hour daily control, so far as interior existence is concerned, for a period of perhaps 5 years. Retention institutions, or perhaps foundling homes, with their attendants, suggest themselves as proper places for investigating the subject, where some of the inmates could be left under the present mode of heating, and the others required to depend upon heat from a glowing radiant source for comfort.—Emery R. Hayhurst, M.D., Ohio State University.

University Degrees in Public Health*

THE report of the committee consists of two tables presenting data concerning candidates for and recipients of public health degrees during the year 1927, and replies to an inquiry sent to schools granting the Doctor of Public Health degree.

TABLE I

NUMBER OF STUDENTS ENROLLED AND PUBLIC HEALTH DEGREES CONFERRED IN 1927 IN COURSES REQUIRING AT LEAST ONE YEAR OF RESIDENCE AND LEADING TO A PUBLIC HEALTH CAREER

School	Degree	No. Enrolled 1926-1927	No. of Degrees Conferred 1927
University of California	Dr.P.H.	0	0
	M.A.	1	1
	A.B.	13	7
DeLamar Institute of Public Health, Columbia University	M.S.	1	1
Detroit College of Medicine and Surgery	Dr.P.H.	0	1 honorary
University of Georgia	D.P.H.	0	1
	M.S.	0	0
	B.S.	2	2
Harvard School of Public Health	Dr.P.H.	5	1
	M.P.H.	11	7
	C.P.H.	8	5
Johns Hopkins School of Hygiene	Dr.P.H.	13	8
	Sc.D. in Hygiene	33	11
	C.P.H.	23	16
Massachusetts Institute of Technology	S.B. in P.H.	26	6
	C.P.H.	4	1
	Dr.P.H.	2	1
	Ph.D.	7	2
McGill University	D.P.H.	0	0
University of Michigan	M.S.	11	4
	D.P.H.	3	1
University of Minnesota	M.A.	2	1
	B.A.	2	2
University of Montreal	D.P.H.	0	0
Ohio State University	M.S.	4	1
University of Pennsylvania	Ph.D.	1	1
	Dr.P.H.	0	0
Queen's University	D.P.H.	0	0
University of Toronto	Ph.D.	1	0
	M.A.	2	1
	D.P.H.	6	4
University of Western Ontario	D.P.H.	0	0
Yale School of Medicine	Dr.P.H.	1	1
	Ph.D.	10	5
	C.P.H.	5	5
	M.S.	2	1
Total		199	98

* Report of the Committee on Training and Personnel of the American Public Health Association for the calendar year 1927.

TABLE II

NUMBER OF DEGREES IN PUBLIC HEALTH GRANTED IN UNITED STATES AND CANADA IN 1927

Degree	Degrees Granted	Schools Offering the Degree
Certificate in Public Health	27	4
Doctor of Public Health	12	6
Doctor of Science in Hygiene	11	1
Doctor of Philosophy (Public Health or Hygiene)	8	4
Bachelor of Science (Public Health or Hygiene)	8	2
Bachelor of Arts in Hygiene	9	2
Master of Science (Public Health or Hygiene)	7	5
Master of Public Health	7	1
Diploma in Public Health	6	7
Master of Arts in Hygiene	3	3
Total	98	

THE HONORARY DOCTOR OF PUBLIC HEALTH DEGREE

Believing that the Doctor of Public Health degree should not be granted as an honorary degree but that it should be granted only upon the completion of a definite and adequate program of training, the committee has sought to ascertain the attitude of the various schools. In reply to inquiries sent to all schools which have granted the Doctor of Public Health degree, the following conditions have been reported:

Harvard University, Johns Hopkins University, Massachusetts Institute of Technology, University of California and Yale University give the Doctor of Public Health degree in course, but they have never given an honorary Doctor of Public Health degree and the faculty representatives upon this committee state that it is contrary to the policy of these institutions to do so. The University of Michigan gives the Doctor of Public Health degree in course, but it has discontinued by faculty action the policy of granting the honorary Doctor of Public Health degree.

In Canada, at Queen's University, McGill University, University of Montreal, University of Toronto and University of Western Ontario, the Diploma in Public Health is offered as a degree in course, but never as an honorary degree.

Detroit College of Medicine and Surgery, University of Georgia, and University of Pennsylvania offer the Doctor of Public Health degree in course and have also given it as an honorary degree. The committee representatives from these schools state that the schools are opposed to granting the honorary Doctor of Public Health degree frequently or as a routine procedure, but they believe the schools are not willing as yet to surrender the occasional privilege of giving it to exceptional individuals.

The other institutions which offer public health training have not up to the present time offered the Doctor of Public Health degree.

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The Continuous Clinic

THE continuous clinic has been carried out in small towns and rural communities of Geary County, Kan., with apparent satisfaction to all concerned—the underprivileged child, the profession and those contributing funds.

A limited fund for this health work was obtained by means of the Christmas Seal sale. When the physicians, dentists and optometrists were approached for their coöperation, without exception they offered their services. Following the conclusion of preliminary arrangements two blanks were printed and distributed.

The method for locating worthy and needy patients for the clinics is simple. Whenever a school nurse, teacher or other responsible person discovers a child who is in need of a tonsillectomy, spectacles or dental work, or a nutritional case where the economic condition of the family does not permit proper provision for the child, she fills out Blank 1, which states that the child is in need of dental, throat or eye work, and is financially unable to take care of it. Upon receipt of Blank 1 by the director of the clinic, Blank 2 is sent to the parents with the request that they fill it out and return to the clinic director. Blank 2 is really a contract between the doctor or dentist and the child. Corrective work may be done then or at a time more convenient to patient and physician or dentist. When the service is completed the blank indicating the work that has been done is returned with the charges. The charges are paid from the fund, which closes the case.

This plan for the Continuous Eye, Throat and Dental Clinic which has been in operation in Junction City for more than a year has advantages over other plans tried, because,

1. In a small community there are seldom enough cases to require a special day set apart for that purpose.

2. It gives us time to inquire and ascertain that the child is really in need of the work and is unable to pay for it from the family income.

3. It enables the doctor, dentist or eye man to coöperate to better advantage and still not absent himself from his office for several hours at a time.

4. The child going to the doctor by regular appointment is often saved from the feeling of pauperism.

5. This plan avoids the criticism expressed by some that public clinics are a direct step toward obligatory state medicine—R. B. Stafford, M.D., Health Officer, Geary County, Junction City, Kan.

EDITORIAL SECTION

Expressions of opinion and statements of supposed facts are published on authority of the writer under whose name they appear, and are not to be regarded as expressing the views of the American Public Health Association, unless such statements or opinions have been adopted by vote of the Association.

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FIFTY-SEVENTH ANNUAL MEETING

ONCE each year in an unbroken series, from 1872 to 1927, the American Public Health Association has brought together at its Annual Meeting the public health profession of the North American Continent.

The 57th Annual Meeting which will be held at Hotel Stevens, in Chicago, October 15-19, 1928, promises to equal or exceed any previous meeting in size, interest and scientific value. Not since the Semi-Centennial in 1921 has an Annual Meeting had such an auspicious setting. The program, which is printed in this issue, is one of great merit, and exceeds in variety those of previous years.

The Local Committee has planned so generously for trips of scientific and general interest, for entertainment for delegates, and especially for ladies, that it has been impossible to give more than an outline of their plans in the space available in the JOURNAL.

This Annual Meeting of the American Public Health Association will be enriched by the presence of many members of nine other organizations. The American Child Health Association will hold its Annual Meeting jointly with us. Simultaneously there will be held the Annual Meeting of the Illinois Conference of Health Officers and Public Health Nurses. There will be meetings also of the International Association of Milk and Dairy Inspectors, American Social Hygiene Association, Conference of State Sanitary Engineers, Conference of State Laboratory Directors, Women's Foundation for Health, Association of Women in Public Health, Association of School Physicians.

It is only at infrequent intervals in the course of the public health movement on the North American Continent that there is brought together at one time and in one place such a galaxy of leaders. No stretch of the imagination is needed to picture the significance of such

an event. The younger members of the profession will be able to see, hear and meet those more experienced leaders whom they have previously followed only through the printed page. Old friendships will be brought up to date and new ones will be made. The isolated worker who has been fighting single-handed will give and gain strength by his presence.

The older leaders will be encouraged in their hopes by seeing many young recruits. There will be much of technic—purely professional patter—but meaningful. There will also be let loose those forces more difficult of measurement which bind together those facing a common task.

Will you be there?

PRESENT STATUS OF CHEMICAL FOOD PRESERVATIVES AND COLORING MATTERS

THE addition of chemical preservatives to foods has been a matter for hot discussion over many years, and in this country has even played a part in politics. During the World War regulations were relaxed, and until recently no authoritative statement of the laws in various countries has been available. We owe to The Office International D'Hygiène Publique a report which gives the regulations in eighteen countries, Germany being the most important one for which there are no data.

It is possible to give only a general summary, as the preservatives allowed in different countries vary considerably, and in some, the United States for example, there are general laws carried out by regulations. In this country the law prohibits the use of any poisonous or injurious substances which may affect the healthfulness of the food, certain chemicals, such as salicylic and boric acids, the borates and formaldehyde being forbidden. In the case of foods for use on ships the external application of certain preservatives is allowed, but they must be such as can be easily removed mechanically, or by soaking in water, or by other processes, and a label must be attached giving directions for this.

The artificial coloration or decoloration of foods has reached the point of being a fine art. A great variety of coloring matters is allowed, and on this account the regulations regarding this matter are much more inexact than are those concerning preservation. For the most part, the coloring matters used at present are coaltar derivatives, and in the United States one is required to use materials which have been certified by the proper officers. It will be remembered that fairly

recently the use of nitrites instead of nitrates has been allowed to give the red color to corned beef and similar products.

It is interesting to note that formaldehyde is not recommended by any country, and its use is specifically forbidden in many, including England, Canada, Australia, the United States, Bulgaria, and France. New Zealand, Sweden, Switzerland, England, Bulgaria, and the United States prohibit the use of boric acid or its compounds, while Canada, France, and some other countries allow it in such foods as butter, condensed milk, cream, and margarine, under restriction as to the amount. The United States, England, Bulgaria, and France prohibit the use of salicylic acid, while a number of other countries allow its use in minimum amounts. Benzoic and sulphurous acids are allowed more widely than any other preservatives. In England and Wales these are the only preservatives permitted and their use is restricted to certain foods and within definite limits as to quantity. France forbids the use of benzoic acids and benzoates.

In studying the bulletin [1] one is impressed by the fact that there is greater uniformity in the countries which have reported than there was a few years ago. Certain preservatives are quite generally prohibited or their use limited, and there is considerable uniformity in the sanction of certain preservatives for the same foods.

The matter is one about which there is some room for difference of opinion. The safe rule is to allow only those preservatives which, after extensive trial or prolonged use, have been proved harmless. In general, chemical preservation should be restricted as far as possible, especially in view of the almost universal refrigeration which is now available. The addition of preservatives makes it possible to put foods on the market which are unfit for use, and advantage is taken of this fact by some manufacturers. It may be said with certainty that the more nearly foods are used in their fresh and natural condition, the better for the consumer, the less the danger of injury by poisoning, acute or chronic, and the surer we are of not destroying certain valuable properties belonging naturally to the foods.

REFERENCE

1. *Supplément au Bulletin Mensuel*, t. XX, no. 3, mars, 1928.

TULAREMIA

THIS disease, which is now attracting considerable attention, was first described by McCoy, in 1911, as "a plague-like disease of rodents," having been found in the routine examination of these animals carried on in San Francisco. The causative organism was named *Bacterium Tularense*.

In 1919 and 1920, Dr. Francis, of the U. S. Public Health Service, found the same disease in Utah, gave it its present name, and showed that it was spread by the deer fly. In that section it was known as "deer fly fever." It is called by market men, "rabbit fever," owing to the fact that in the East, at least, it is kept alive in wild rabbits, and they are the chief source of infection for man. In this section, November, December and January are the months in which the majority of cases occur, since vast numbers of these animals are killed and sold for food.

The germ was isolated in 1912 by McCoy and Chapin. Spleens and livers of infected animals contain the germs.

The disease is extremely infectious and every laboratory man who has worked with the germ in this country and in England has contracted it. In nature, the deer fly (*Chrysops discalis*) and the wood tick (*Dermacentor andersoni*) are apparently the chief agents in conveying the disease from animal to man. Under laboratory conditions, the mouse louse, the bedbug, the stable fly and the squirrel flea have been shown to be capable of transmitting the germ. Ticks harbor the infection in their feces, their circulatory fluid and in the epithelial cells of their intestinal tract. The germ is able to survive the winter in the tick, and may be transmitted from stage to stage in the development of the tick, and is transmitted through the egg to the next generation. Even the handling of an infected tick appears to produce infection, though the sucking period is the dangerous time. Certain flies seem to carry the infection for four days at the longest. The deer fly is commonly found on horses in Utah from May to September. The woodtick is found in Montana and adjoining states, and is active in March, April, May and June. In other parts of the country, the ordinary wild rabbit seems to be the important source of infection. West of the Mississippi River, the jack rabbit is the chief agent in spreading the disease. It is used for bait, the feeding of chickens, dogs and foxes, as well as for the table.

During the last few years, a number of cases have been reported from states in the East. Most of these have been found in and near Washington, D. C., probably due to the activity of Dr. Francis in that area. Twenty-two cases have been recorded, and of the patients, 17 have been engaged in dressing rabbits for the market.

The disease is not very fatal, the mortality being about 4 per cent. Among 420 recorded cases, 17 deaths have occurred, but these include only cases reported to the U. S. Public Health Service, which up to the present has been the body which has shown the greatest activity in studying the disease and its epidemiology. Cases have been

reported from 37 states, the District of Columbia and Japan, but none from the 9 New England States, the only area in this country known to be free.

There are two general types of the disease—one in which the glands become enlarged and painful, and are apt to go on to suppuration, and the other, seen in laboratory workers, which resembles typhoid fever. Fever, running as high as 104°, is always a symptom, and persists for from 2 to 3 weeks. The diagnosis is confirmed by agglutination with a known culture.

Special precautions must be taken in the diagnosis by agglutination, similar to those for typhoid fever. The reaction is absent during the first week, but comes on in the second week, often in low titer, though occasionally it will show agglutination in a dilution of 1 to 500 or even higher. The maximum agglutination appears during the third and fourth weeks. Agglutination in dilutions of 1 to 1200 is not uncommon, and takes place even up to 1 to 2500. At least 0.5 c.c. of blood is required, and more than this quantity is desirable. The reaction is very persistent, lasting for five years or more. No preservatives other than pure neutral glycerin should be added.

The disease has never been observed in domestic animals. There is no special treatment, no preventive vaccine, no curative serum, and no drug has been found which has any specific effect.

Fortunately the germ is easily killed in cooking, 133° F. being sufficient. Those who dress rabbits for market should wear rubber gloves, and since one attack protects against another, immune persons should be employed in this work as far as possible. Freezing for 30 days will render dead rabbits free from danger. Market inspection is of little value since the organs which carry infection—the liver and spleen—have been removed in dressing. Health officers and physicians who are called to cases which are not easy of diagnosis should remember to look for tularemia.

TERMINAL DISINFECTION

THIS subject has not been much discussed in the United States for some years past. As early as 1912, Charles V. Chapin, M.D., for the first, as far as we are aware, showed the doubtful value of terminal disinfection both as an abstract proposition and as actually practiced. He discontinued terminal disinfection for certain diseases in the City of Providence as early as 1905. In 1914 it was discontinued in certain boroughs of New York City, and in Manhattan on January 1, 1915. Convincing figures were collected by Dr. Chapin, and later by the

authorities in New York, to show that the discontinuance of terminal disinfection had not led to the increase of contagious diseases. An enormous amount of money was thereby saved without detriment to the public health. While other cities have followed suit, the practice is still continued in many places, and without doubt has a strong hold on the public as well as the profession.

The matter was called to the public attention last year by a masterly presentation by Dr. Carlos Chagas,[1] and more recently by a translation and reproduction of his article in England.[2] In this country it would seem almost unnecessary to comment upon this subject except for the widespread sale of disinfectants, good, bad, and indifferent, and the frequent advertisement of alleged new discoveries of germicidal substances, though we believe that these appear much less frequently than a few years ago, when scarcely a week passed without some alleged discovery. The great majority of these preparations were coal tar products, and their relative value depended upon the amount of a few active substances which they contained, and upon their miscibility and solubility. One has only to consult the table worked out by the late Dr. McClintic [3] to become convinced of the lack of value of many of these preparations. The names of them often indicated the known chemical upon which their value, such as it was, depended. It was always cheaper and better to use the chemicals, which were easily obtainable from wholesale houses in greater or less degrees of purity.

A survey of disinfection as practiced in various countries has convinced Dr. Chagas that the procedure was almost always useless, based on incorrect ideas, and the results not commensurate with the expense, conclusions which had been reached by Dr. Chapin and others many years ago. While these procedures have had a certain educational value, and have allayed the fears of nervous people, their actual value has been slight. Unfortunately, if disease germs are scattered through premises in which contagious diseases have been treated, it is impossible in most cases to locate them, or to influence them through any "process of camouflage," as it has been called by Dr. Balfour. It has been wisely taught for some years that a properly cared for case of contagious disease should not be allowed to contaminate the surroundings. Dr. Chagas stresses the point that the great objection to terminal disinfection is not so much its uselessness as a preventive measure, but the fact that it seems necessary. The real danger from a contagious disease lies in the excretions from the body. Disinfection of the sputum, excreta, and pathological discharges, should be carried out during the progress of the case rather than after death or recovery,

since whatever danger is possible has already occurred and late disinfection cannot do away with it.

Patients suffering from communicable diseases must be protected during their illness. Clothing, bedding, towels, utensils, and all other objects which are used or which come into contact with the patient should be promptly disinfected. The high value of hot water and soap, sunshine and fresh air must not be forgotten. It is expensive and impracticable to increase the rigor of terminal disinfection to a point where it will be absolutely effective.

Dr. Chagas takes up in detail a number of contagious diseases to demonstrate his ideas and one cannot read his arguments without being convinced of the soundness of his reasoning, backed up as it is by an extensive experience.

As Americans, we take pride in the fact that, as far as our knowledge goes, Dr. Chapin preceded all others in these ideas and in the practical demonstration of their soundness; but we welcome the clear presentation given by Dr. Chagas in corroboration of what we have believed and practiced for a number of years.

REFERENCES

1. Office International d'Hygiene Publique. *Bulletin Mensuel*, May, 1926, p. 484.
2. Wm. Hodge & Company, Ltd., Glasgow, 1928.
3. *Bull. Hyg. Lab., U. S. P. H. S.*, No. 82.

CHILD WELFARE IN CHICAGO

HEALTH workers who attend the 57th Annual Meeting in Chicago in October will have an exceptional opportunity to see the results, in child welfare work, of earnest coöperation between private social agencies and the public officials of that city, especially the Department of Health. Child welfare activities in Chiçago, as in other large cities have grown to include a wide and varied range of endeavor. The Chicago Local Committee is making arrangements so that those who attend the convention may see the outstanding work of the Chicago Health Department, the Infant Welfare Society, the Visiting Nurses' Association, the Elizabeth McCormick Memorial Fund, the Illinois Institute for Juvenile Research, the Juvenile Court and the Juvenile Protective Association, together with that of other child welfare agencies.

Child Welfare activities in Chicago may be grouped as prenatal, infant welfare, preschool, and school. Chronologically, work for the school child was the first to be started. In 1896, medical inspection of school children for contagious diseases was instituted. In 1908, this was expanded to include physical examinations for defects, and a corps of nurses was added to do the follow-up work in getting these defects corrected.

At the present time, with the exception of special nutrition work being done by the Elizabeth McCormick Memorial Fund and tuberculosis prevention by the Municipal Tuberculosis Sanitarium, all health activities in the public and parochial schools are carried on by the Department of Health. The school physicians of this department work in three groups, as follows:

One hundred and twenty-two physicians visit the schools daily to inspect for contagious diseases; each physician is permanently assigned to a district and is held responsible for the schools within that area. Fifty-two physicians conduct thorough physical examinations of the children in the kindergarten and primary grades, and routine reinspections of the 6th and 8th grade children graduating into the junior and senior high schools. Ten to 20 physicians are assigned to the administration of toxin-antitoxin, making Schick tests and vaccinating against smallpox. During the 5 school days each week, they spend their time in the schools, but on Saturdays they render this service to infants and preschool children at the infant welfare stations and other health and social centers. The nursing staff assists these physicians in all the above mentioned activities and carries out the necessary follow-up work.

Defects discovered by physicians conducting physical examinations are corrected by private physicians, dispensaries and such special agencies as the Illinois Society for the Prevention of Blindness, The Chicago Heart Association and many others. Dental care is provided through the private dentists at 12 dental clinics maintained in the schools by the Department of Health; the Municipal Tuberculosis Sanitarium at the 8 dispensaries; the children's dental clinic at the Cook County Hospital and the clinics of the dental colleges.

A discussion of the health work in the schools would not be complete without mentioning the home hygiene courses given to grammar school pupils of the parochial schools by the American Red Cross and the Chicago Department of Health; through these classes 60,000 boys and girls have received instructions in home health, and, to some extent,

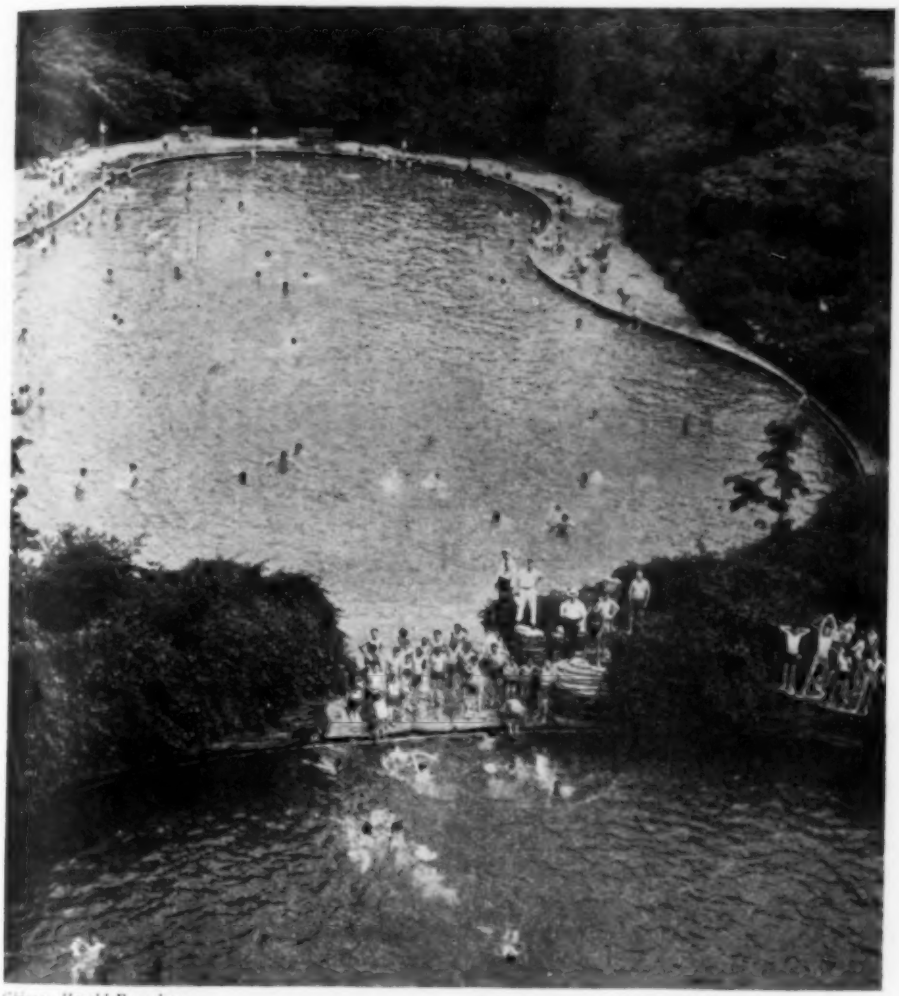
CALIFORNIA PARK HAS ITS OWN OL' SWIMMING HOLE

Chicago Herald-Examiner

HOW MUCH HAVE THEY GAINED?

A story told at one of Chicago's Infant Welfare Stations

Underwood & Underwood



Chicago Herald-Examiner

SWIMMERS ENJOY THE POOLS IN COLUMBUS PARK

home care of the sick has been taught.

After the inauguration of health work in the schools, the next large child health effort had its beginning in 1899, when Dr. A. R. Reynolds, then Commissioner of Health, assigned 73 volunteer physicians during the hot weather to mother and infant care in the thickly populated and poor sections of the city.

In 1902, the Milk Commission began and continued for 8 years to prepare and distribute to needy mothers clean modified milk.

Infant welfare as it is today had its beginning in 1909 in a coöperative movement of the United Charities, the Visiting Nurse Association and the Department of Health and including, of course, the work of the Milk Commission already existing, to lower further the infant mortality rate. Important as this work was, and though it accomplished much, it was decided that one organization would be more effective, and consequently all baby welfare agencies were reorganized into a single private agency,

Chicago Herald-Examiner

CEREAL TASTES MIGHTY GOOD AT THE PRESCHOOL CONFERENCE

the Chicago Infant Welfare Society. Today this organization conducts 23 stations, for the most part situated in the poverty area surrounding the "Loop," where the infant mortality rate is highest.

In 1913, coöperating with the Infant Welfare Society, the Department of Health entered this field and is now conducting 22 stations in the more outlying districts outside the zone of activity of the Infant Welfare Society. By mutual agreement, each organization confines its work to its own districts and a mother is allowed to transfer from one district to another only by special permission.

These early activities in infant care proved their effectiveness by markedly lowering the infant mortality rate. However, it was found that before this rate could be lowered further the prenatal, natal and preschool periods must also be given careful attention, as the death rate in these periods remained unchanged. Consequently, both the Infant Welfare Society and the Department of Health expanded the station work to include prenatal and preschool care. The society now has 10 prenatal and 17 preschool conferences. The Department of Health has 6 prenatal and 14 preschool conferences. As the physical care of the child has been perfected, a realization of his mental needs has developed; to meet this need the Infant Welfare Society has added a trained psychiatric social worker to its staff to aid in discovering and caring for behavior problems among children.

With the recently aroused interest in the preschool child, especially from the standpoint of behavior, the nursery school has come into vogue. There are three remarkable examples of this type of education in Chicago, namely the University of Chicago Coöperative Nursery School, The Nursery School of the Franklin Public School and the Mary Crane Nursery School at Hull House.

Beside the activities of the Infant Welfare Society and the Department of Health in the prenatal field, much work is being done by other organizations. The Chicago Community Trust, in 1922, in their survey of prenatal care in Chicago found 32 organizations conducting prenatal conferences. Outstanding is the work of the Chicago Lying-in Hospital and its 2 out-departments. All the medical schools and many of the hospitals conduct prenatal conferences.

With so many agencies at work in one field of endeavor, it is inevitable that there is much dovetailing and overlapping and even duplication of effort. Much of this is now eliminated by the clearing of all cases through the Social Service Exchange. Mutual understanding and coöperation of the agencies are promoted by the Chicago Council of Social Agencies. As an example of the coöperative effort, the Mary Crane Nursery School at Hull House deserves special mention. In this project, handling about 53 school children, the educational work is carried on by the National Kindergarten and Primary College of Evanston, the medical and nutritional work by Chicago Infant Welfare Society, the mental hygiene by the Illinois Institute for Juvenile Research, the dental work by the Chicago Department of Health and the social work by the United Charities.

A final word must be said of the outdoor facilities for play and recreation with which Chicago is so wonderfully supplied. In all parts of the city are small parks and playgrounds with organized and supervised activities. There are many miles of beach along the lake shore and thousands of acres of forest preserves just outside of the city limits. Certainly, these features are no small adjunct in aiding these other human agencies in maintaining a high standard of child welfare in this community.

Chicago Herald-Examiner

LEARNING FATHERCRAFT AT ONE OF THE RED CROSS HOME NURSING SCHOOLS

PRELIMINARY PROGRAM OF THE FIFTY-SEVENTH ANNUAL MEETING

AMERICAN PUBLIC HEALTH ASSOCIATION

Chicago, Ill. October 15-19, 1928

DELEGATES are urged to consult the final program at the meeting for information as to the exact time and place of sessions. All meetings will be held in the Hotel Stevens. Morning sessions will be at 9:30; luncheon sessions at 12:30; afternoon sessions at 2:30; dinner sessions at 6:30; and evening sessions at 8:30.

GENERAL SESSIONS

First Session—Monday Evening

Addresses of Welcome.

Address of the President of the American Public Health Association. HERMAN N. BUNDESEN, M.D., Health Director, Chicago Sanitary District, Chicago, Ill.

Address of the President or of a Representative of the American Child Health Association.

Second Session—Wednesday Evening

Report of the Committee on Dairy Products. WILLIAM H. PARK, M.D., Director Health Department Laboratories, New York, N. Y.

Organizations for the Care of the Sick. W. S. RANKIN, M.D., Duke Endowment, Charlotte, N. C.

How To Use Effectively Civic Groups in Promoting Health Programs. E. L. BISHOP, M.D., State Health Commissioner, Nashville, Tenn.

International Health. FRANK G. BOUDREAU, M.D., Health Section, League of Nations, Geneva, Switzerland.

Banquet—Thursday Evening

Program in Charge of Local Committee

SPECIAL SESSIONS

CANCER

Special Session—Wednesday p. m.

Program arranged by the President

COMMITTEE ON TRAINING AND PERSONNEL

Dinner Session—Wednesday

(This is an open meeting of the committee to which everyone is invited.)

Minimum **Training For All Persons Entering the Public Health Profession.**

Presiding, C. E. TURNER, DR.P.H., Professor Department of Biology and Public Health, Massachusetts Institute of Technology, Cambridge, Mass.

Discussion. JOHN SUNDWALL, M.D., Director, Division of Hygiene, Public Health and Physical Education, University of Michigan, Ann Arbor, Mich.

EPIDEMIOLOGY

Special Session—Thursday p. m.

The **Age Distribution in Milk-borne Outbreaks of Scarlet Fever and Diphtheria.** EDWARD S. GODFREY, JR., M.D., Director, Division of Communicable Disease, State Department of Health, Albany, N. Y.

A Further Epidemiological Study of Undulant Fever in Michigan. PAUL F. ORR, M.D., Commissioner of Health, Toledo, O.

Epidemiological **Studies of 83 Cases of B. Abortus Infection.** A. V. HARDY, M.D., State Epidemiologist, Iowa City, Ia.

A Series of Typhoid Cases Infected per Rectum. CLIFFORD R. HERVEY, M.D., District State Health Officer, Oswego, N. Y.

Water-**borne Epidemics of Diarrhea in Illinois.** THOMAS G. HULL, PH.D., Diagnostic Laboratory, State Department of Public Health, Springfield, Ill., LLOYD ARNOLD, M.D., Associate Professor of Bacteriology and Preventive Medicine, University of Illinois College of Medicine, Chicago, Ill., and HARRY F. FERGUSON, Sanitary Engineer, State Department of Health, Springfield, Ill.

An Epidemiological and Bacterialogical Study of Epidemic Meningitis in Chicago. ALTON S. POPE, M.D., and JOHN L. WHITE, M.D., Department of Health, Chicago, Ill.

Racial Distribution and the Death Rate of Diphtheria in New York City. HAVEN EMERSON, M.D., Department of Public Health Administration, Columbia University, New York, N. Y. (*Stereopticon Illustration.*)

Discussion. EDWARD S. GODFREY, JR., M.D., State Department of Health, Albany, N. Y.

JOINT SESSIONS

HEALTH OFFICERS AND THE AMERICAN SOCIAL HYGIENE ASSOCIATION

Joint Luncheon Session—Monday

MUNICIPAL CONTROL OF VENEREAL DISEASES

Chairman, C. HAMPSON JONES, M.D., Commissioner of Health, Baltimore, Md.

Discussion. HENRY F. VAUGHAN, D.P.H., Commissioner of Health, Detroit, Mich., WALTER M. BRUNET, M.D., Secretary, Social Hygiene Committee, New York Tuberculosis and Health Association, New York, N. Y., EARLE G. BROWN, M.D., Secretary, Kansas State Board of Health, Topeka, Kan., and ALBERT PFEIFFER, M.D., Director, Division of Social Hygiene, State Department of Health, Albany, N. Y.

LABORATORY AND FOOD, DRUGS AND NUTRITION SECTIONS

Joint Session—Monday p. m.

Colon-Aerogenes Group in Milk. EDMUND K. KLINE, DR.P.H., Jefferson County Board of Health, Birmingham, Ala.

Recent Observations upon the Detergent Action of Dairy Washing Compounds. MILTON E. PARKER, Technologist, Philadelphia Dairy Products Company, Inc., Philadelphia, Pa.

Heat Resistant and Heat Loving Bacteria in Pasteurized Milk. ROBERT S. BREED, PH.D., Chief in Research, Agricultural Experiment Station, Geneva, N. Y. (*Stereopticon Illustration.*)

Failure of Standard Method for Visible Dirt in Milk to Meet Connecticut Requirements: Need for New Standard for Market Milk. FRIEND LEE MICKLE, M.S., Director, Bureau of Laboratories, State Department of Health, Hartford, Conn. (*Stereopticon Illustration.*)

Discussion. Opened by ROBERT S. BREED, PH.D., Chief in Research, Agricultural Experiment Station, Geneva, N. Y.

Viability of B. Typhosus in Cheddar Cheese. E. M. WADE and LEWIS SHERE, State Department of Health Laboratories, Minneapolis, Minn.

CHILD HYGIENE AND PUBLIC HEALTH NURSING SECTIONS WITH AMERICAN CHILD HEALTH ASSOCIATION

Joint Session—Tuesday a. m.

MATERNAL MORTALITY

Presiding: FRED L. ADAIR, M.D., Professor of Obstetrics and Gynecology, University of Minnesota Medical School, Minneapolis, Minn.

Report of the American Public Health Association, Child Hygiene Section, Committee to Report on the Status of Maternal and Infant Mortality. *Chairman,* JULIUS LEVY, M.D., Consultant, Bureau of Child Hygiene, State Department of Health, Trenton, N. J.

Discussion

Report of Sessions on Maternal Mortality in the Conference of State Directors of Maternity and Infancy Work, U. S. Children's Bureau, April, 1928. BLANCHE M. HAINES, M.D., Director of Division of Maternity and Infant Hygiene, U. S. Children's Bureau, Washington, D. C.

Discussion. LILLIAN R. SMITH, M.D., Director, Bureau of Child Hygiene and Public Health Nursing, State Department of Health, Lansing, Mich.

Report of Section of Obstetrics, Gynecology and Abdominal Surgery of the American Medical Association. CARL H. DAVIS, M.D., Chairman, Section of Obstetrics, Gynecology and Abdominal Surgery of the American Medical Association, Milwaukee, Wis.

Discussion. WILLIAM C. DANFORTH, M.D., Fellow, American Gynecological Society, Evanston, Ill.

Report of Maternity Center Association Experiences in Tioga County, N. Y. HAZEL CORBIN, R.N., General Director, Maternity Center Association, New York, N. Y.

Discussion. GUY S. CARPENTER, M.D., Chairman of Public Health Committee of Tioga County Medical Society, Waverly, N. Y.

HEALTH OFFICERS, PUBLIC HEALTH NURSING AND CHILD HYGIENE SECTIONS WITH THE AMERICAN CHILD HEALTH ASSOCIATION

Joint Session—Tuesday p. m.

Studies on Infant Mortality. GEORGE T. PALMER, D.P.H., Director, Division of Research, American Child Health Association, and DOROTHY F. HOLLAND, PH.D., Staff Associate, American Child Health Association, New York, N. Y.

Discussion. PHILIP VAN INGEN, M.D., Professor of Clinical Pediatrics, Columbia University, New York, N. Y.

General Discussion

Pediatric Service in City Health Department Centers Provided by Medical Schools in Boston. HAROLD C. STUART, M.D., Department of Child Hygiene, School of Public Health, Harvard University, Boston, Mass.

Discussion. WILLIAM H. PETERS, M.D., Commissioner of Health, Cincinnati, O.

General Discussion

Result of the National Congress of Parents and Teachers 1927 Summer Round-up of Preschool Children. MARY E. MURPHY, Director, Elizabeth McCormick Memorial Fund, Chicago, Ill.

General Discussion

SYMPOSIUM ON PRESCHOOL HEALTH SUPERVISION

In the Small Towns and Rural Areas. ELIZABETH M. GARDINER, M.D., Director, Division of Maternity, Infancy and Child Hygiene, State Department of Health, Albany, N. Y.

In a Small City. B. K. KILBOURNE, City Health Officer, Fargo, N. D., and LESTER J. EVANS, M.D., Child Health Demonstration Committee, New York, N. Y.

In a Limited Area of a Large City. GRACE L. ANDERSON, R.N., Director, East Harlem Nursing and Health Service, New York, N. Y.

In a Large City. By a Voluntary Agency Acting for the City Health Department. SARA B. PLACE, R.N., Superintendent, Infant Welfare Society, Chicago, Ill.

PUBLIC HEALTH ENGINEERING AND LABORATORY SECTIONS

Joint Session—Friday a. m.

SYMPOSIUM ON RESEARCH IN SEWAGE AND INDUSTRIAL WASTE DISPOSAL

Can Garbage be Digested with Settling Sludge? GORDON M. FAIR, Assistant Professor of Sanitary Engineering, Harvard University, Cambridge, Mass. (*Stereopticon Illustration.*)

Some Biochemical Factors in Sewage and Sludge Treatment. WILLEM RUDOLFS, Chief, Department of Sewage Disposal, Agricultural Experiment Station, New Brunswick, N. J.

Discussion. 20 minutes

Comparison of Stream Flow and Diffused Air Aeration in Purification of Packing House Wastes. MAX LEVINE, PH.D., Professor of Sanitary Bacteriology, HARRY N. JENKS and GEORGE NELSON, Iowa State College, Ames, Ia.

The Relation of Sulfite Reducing Bacteria in Sewage. FRANK E. GREER, Principal Bacteriologist, Department of Health, Chicago, Ill.

Discussion. 20 minutes.

Need for Coördination of Research in Sewage and Industrial Wastes. CLARENCE M. BAKER, Engineer, American Paper and Pulp Association, New York, N. Y.

CHILD HYGIENE AND PUBLIC HEALTH EDUCATION SECTIONS WITH THE AMERICAN CHILD HEALTH ASSOCIATION

Joint Session—Friday a. m.

SCHOOL HEALTH EDUCATION

EFFORTS TO DATE TO DEFINE OBJECTIVE STANDARDS IN HEALTH EDUCATION

A Review of School Health Work. JAMES F. ROGERS, M.D., DR.P.H., Chief, Division of Physical Education and School Hygiene, Bureau of Education, Washington, D. C.

Discussion. This paper will be discussed through progress reports of present-day school health studies, as follows:

Health Education Studies Carried on by the University of Michigan. JOHN SUNDWALL, M.D., Director, Division of Hygiene, Public Health and Physical Education, University of Michigan, Ann Arbor, Mich.

Educational Tests in American Child Health Association School Health Study. RAYMOND FRANZEN, PH.D., Research Director, School Health Study, American Child Health Association, New York, N. Y.

LABORATORY

First Session—Tuesday a. m.

Report of the Committee on Training and Personnel—*Laboratory Section Representative,* JOHN F. NORTON, PH.D., Director of Laboratories, Department of Health, Detroit, Mich.

Standardization of the Wassermann Test. Report of Progress for 1928. (Report of the Committee on Standard Methods.) *Referee,* RUTH GILBERT, M.D., State Department of Health, Albany, N. Y.

Report of the Committee on Standard Methods. *Chairman,* E. O. JORDAN, PH.D., University of Chicago, Chicago, Ill.

Report of the Committee on Abstracts in the Journal. *Chairman,* C. C. YOUNG, D.P.H., Director, State Department of Health Laboratories, Lansing, Mich.

SYMPOSIUM ON UNDULANT FEVER

B. abortus in **Milk and its Relation to Undulant Fever.** CHARLES M. CARPENTER, PH.D., New York State Veterinary College, Diagnostic Laboratory, Cornell University, Ithaca, N. Y., and MERRILL J. KING, M.D., Director, John R. Hegeman Laboratory, Metropolitan Life Insurance Company, Mt. McGregor, N. Y.

Further **Observation on Human Infection with B. abortus.** JAMES G. MCALPINE, PH.D., Storrs Agricultural Experiment Station, Storrs, Conn., and FRIEND LEE MICKLE, M.S., Director, Bureau of Laboratories, State Department of Health, Hartford, Conn.

Studies **on Blood for Undulant Fever, Endemic Typhus and Tularemia.** WILLIAM S. LITTERER, M.D., Director, State Department of Public Health Laboratories, Nashville, Tenn.

The **Differentiation of Species of the Genus Brucella.** I. F. HUDDLESON, D.V.M., Michigan State College, East Lansing, Mich. (*Stereopticon Illustration.*)

Study **of Methods for Isolation of B. abortus.** RUTH GILBERT, M.D., M. B. COLEMAN and W. M. GROESBECK, State Health Department Laboratories, Albany, N. Y.

Unsolved **Undulant Fever Problems.** ALICE C. EVANS, Hygienic Laboratory, Washington, D. C.

Second Session—Thursday a. m.

A **Study of the Effect of Calmette's B. C. G. Vaccine on Experimental Animals.** MERRILL J. KING, M.D., Director John R. Hegeman Laboratory, Metropolitan Life Insurance Company, Mt. McGregor, N. Y.

2500 **Microscopic Slide Precipitation Tests and Wassermann Tests with Same Antigen with Clinical Comparison.** BENJAMIN S. KLINE, M.D., S. LITTMAN and M. G. BOWMAN, Mt. Sinai Hospital, Cleveland, O.

Use **of Toxoid-Antitoxin Floccules in Diphtheria Immunization.** ROY W. PRYER, D.P.H., State Department of Health Laboratories, Lansing, Mich.

Modified **Iodine Pentoxide Method for Determination of Carbon Monoxide in Air and Blood.** MATHEW J. MARTINEK, Senior Sanitary Chemist, and WILLIAM C. MARTI, Principal Chemist, Department of Health, Chicago, Ill. (*Stereopticon Illustration.*)

Bacteriophage **from a Public Health Standpoint.** NEWTON W. LARKUM, PH.D., State Department of Health Laboratories, Lansing, Mich.

HEALTH OFFICERS

First Session—Tuesday a. m.

Relation **between Ultra-violet Rays and Vital Statistics.** ERROL M. COADE, and I. S. FALK, PH.D., Department of Hygiene and Bacteriology, University of Chicago, Chicago, Ill., with the coöperation of HERMAN N. BUNDESEN, M.D., President, American Public Health Association, and ARTHUR J. DEMPSTER, PH.D., University of Chicago, Chicago, Ill.

Ultra-violet Therapy and Public Health Clinics. H. J. GERSTENBERGER, M.D., Babies and Children's Hospital, Cleveland, O. (*Stereopticon Illustration.*)

The Prevention of Air Pollution. ROBERT D. MACLAURIN, PH.D., Department of Public Health and Welfare, Cleveland, O. (*Stereopticon Illustration.*)

Discussion. HARRY L. ROCKWOOD, M.D., Commissioner of Health, Cleveland, O.

The Effect of Atmospheric Pollution in Baltimore upon the Incidence of Solar Ultra-violet Light. J. H. SHRADER, PH.D., President, Research Laboratories, National Dairy Products Corporation, Baltimore, Md., M. H. COBLENTZ, Chief, Division of Chemical Technology and FERDINAND A. KORFF, Chief of Laboratory, Division of Food and Chemistry, Department of Health, Baltimore, Md.

Actinic Measurement of Solar Ultra-violet Light and some Correlations with the Erythema Dose. FRED O. TONNEY, M.D., PAUL P. SOMERS, and WILLIAM C. MARTI, Bureau of Laboratories and Research, Department of Health, Chicago, Ill. (*Stereopticon Illustration.*)

Four Years' Experience with a Consolidated Inspection Service in the Chicago Department of Health. G. KOEHLER, M.D., Assistant Commissioner of Health, and JOHN M. MURPHY, M.D., Chief of Bureau of Inspection Service, Department of Health, Chicago, Ill.

Second Session—Wednesday a. m.

Health Demonstrations. GEORGE C. RUHLAND, M.D., Health Commissioner, Syracuse, N. Y.

Discussion. WALTER H. BROWN, M.D., Palo Alto, Calif., and L. D. BRISTOL, M.D., Executive Secretary, Bellevue-Yorkville Health Demonstration, New York, N. Y.

Practical Points about Active Immunization against Diphtheria and Scarlet Fever. WILLIAM H. PARK, M.D., Director of Laboratories, Department of Health, New York, N. Y., and MAY C. SCHRODER, M.D., Bureau of Laboratories, New York, N. Y.

Active Scarlet Fever Immunization. S. S. WINNER, M.D., Chicago, Ill.

Report of Work of Committee on Administrative Practice. C.-E. A. WINSLOW, DR.P.H., Professor of Public Health, Yale University, New Haven, Conn.

The Care of Communicable Diseases in General Hospitals. DENNETT L. RICHARDSON, M.D., City Hospital, Providence, R. I.

Discussion. W. S. RANKIN, M.D., Duke Endowment, Charlotte, N. C.

The Revision of the Appraisal Form. GEORGE T. PALMER, D.P.H., Director, Division of Research, American Child Health Association, New York, N. Y.

Third Session—Thursday a. m.

RURAL HEALTH PRACTICE

Modern Rural Health Practice. W. K. SHARP, JR., M.D., State Department of Health, Nashville, Tenn.

Discussion. JOHN A. FERRELL, M.D., International Health Board, New York, N. Y., and L. L. LUMSDEN, M.D., Hygienic Laboratory, U. S. Public Health Service, Washington, D. C.

Fundamental **Principles of Rural Health Service.** WILLIAM S. KEISTER, M.D., Deputy State and County Health Officer, Md.

Discussion. H. S. MUSTARD, M.D., Director Child Health Demonstration, Murfreesboro, Tenn., and FELIX J. UNDERWOOD, M.D., Executive Officer, State Board of Health, Jackson, Miss.

The **Problem of Finance.** DOUGLAS L. CANNON, M.D., Assistant State Health Officer, Montgomery, Ala.

Discussion. CHARLES O'H. LAUGHINGHOUSE, M.D., State Health Officer, Raleigh, N. C.

The **Problem of Trained Personnel.** C. N. LEACH, M.D., International Health Division, Rockefeller Foundation, New York, N. Y.

Discussion. JOHN E. MONGER, M.D., State Director of Health, Columbus, O., and N. E. BARNES, M.D., Health Commissioner, Greenville, O.

Measurements **of Efficiency and Adequacy.** JOSEPH W. MOUNTIN, M.D., U. S. Public Health Service, Nashville, Tenn. (*Stereopticon Illustration.*)

Discussion. W. F. WALKER, D.P.H., American Public Health Association, New York, N. Y., and E. R. SHAFFER, M.D., State Department of Health, Columbus, O.

The **Strength and the Weaknesses of County Health Organizations.** M. E. BARNES, M.D., Health Commissioner, Greenville, O.

VITAL STATISTICS

First Session—Tuesday p. m.

Our **National Accident Problem.** CHARLES B. SCOTT, Manager, Bureau of Safety, Chicago, Ill.

Discussion. W. THURBER FALES, PH.D., Director, Bureau of Vital Statistics, State Board of Health, Montgomery, Ala.

What **We Do Not Know About Accidents.** R. L. FORNEY, Statistician, Public Safety Division, National Safety Council, Chicago, Ill.

Discussion. E. S. MACPHAIL, Superintendent, Census and Vital Statistics Branch, Bureau of Statistics, Ottawa, Ont.

What **We Are Learning About Accidents from Vital Statistics Records.** EARLE G. BROWN, M.D., Secretary State Board of Health, Topeka, Kan., and JAMES E. BAUMAN, Assistant Director, State Department of Health, Columbus, O.

Discussion. HERMAN T. PECK, M.D., General Medical Director, Field Medical Bureau, Department of Health, New York, N. Y.

Second Session—Wednesday a. m.

Section ***Business***

Report **of Nominating Committee and Election of Officers.**

Report **of Committee on Registration Affairs.** *Chairman,* WILLIAM H. DAVIS, M.D., U. S. Bureau of the Census, Washington, D. C.

Report **of Committee on Forms and Methods of Statistical Practice.** *Chairman,* WILLIAM H. DAVIS, M.D., U. S. Bureau of the Census, Washington, D. C.

Report of Committee on Accuracy of Certified Causes of Death and Its Relation to Mortality Statistics and the International List. *Chairman,* HAVEN EMERSON, M.D., Department of Public Health Administration, Columbia University, New York, N. Y.

Report of the Committee to Aid Completion of the Registration Area Before 1930. *Chairman,* LOUIS I. DUBLIN, PH.D., Statistician, Metropolitan Life Insurance Company, New York, N. Y.

Report of Committee on Public Health Climatology. *Chairman,* EDWIN W. KOPF, Assistant Statistician, Metropolitan Life Insurance Company, New York, N. Y.

Report of Committee on Vital Statistics Training. *Chairman,* W. J. V. DEACON, M.D., State Department of Health, Lansing, Mich.

Discussion on Section Betterment.

Third Session—Thursday p. m.

Report of Committee on Proper Allocation of Records. *Chairman,* J. V. DEPORTE, PH.D., Director, Division of Vital Statistics, State Department of Health, Albany, N. Y.

Extent to Which Residence Influences the Recorded Death Rates from Cancer. J. V. DEPORTE, PH.D., Director, Division of Vital Statistics, State Department of Health, Albany, N. Y.

Reallocation of Non-Resident Deaths. WILLIAM C. WELLING, Director, Bureau of Vital Statistics, State Department of Health, Hartford, Conn.

Relation of Climate to Tuberculosis. ROBERT BRUCE WATSON, Industrial Secretary, New Jersey Tuberculosis League, Newark, N. J.

Tuberculosis in Racial Types, with Special Reference to Mexicans. BENJAMIN GOLDBERG, M.D., Secretary, Board of Directors, Municipal Tuberculosis Sanatorium, Chicago, Ill.

Fourth Session—Friday a. m.

Geographic Distribution of Deaths from Diphtheria. DONALD B. ARMSTRONG, M.D., SC.D., Welfare Department, and GEORGE H. VAN BUREN, Supervisor, Statistical Bureau, Metropolitan Life Insurance Company, New York, N. Y.

Practical Use of Vital Statistics in the Establishment of Neighborhood Health Work in New York City. G. J. DROLET, Consulting Statistician, Bellevue-Yorkville Health Demonstration, New York, N. Y. (*Stereopticon Illustration.*)

Vital Statistics in Insurance. EDWIN W. KOPF, Assistant Statistician, Metropolitan Life Insurance Company, New York, N. Y.

A Comparison of Two Methods of Obtaining Epidemic Cycles. G. E. HARMON, M.D., Western Reserve University, Cleveland, O. (*Stereopticon Illustration.*)

Total Mortality Data in New York City, 1866-1927. HAVEN EMERSON, M.D., Department of Public Health Administration, Columbia University, New York, N. Y.

Discussion. WILLIAM H. GUILFOY, M.D., Health Department, New York, N. Y. (*Stereopticon Illustration.*)

PUBLIC HEALTH ENGINEERING

First Session—Monday p. m.

A **County Wide Screening Campaign.** HOWARD R. FULLERTON, Director, Division of Sanitary Engineering, Tennessee Department of Public Health, Nashville, Tenn. (*Stereopticon Illustration.*)

Carbon **Monoxide Pollution of Air in Chicago.** JOEL I. CONNOLLY, Chief, Bureau of Sanitary Engineering, MATHEW J. MARTINEK, Senior Sanitary Chemist, and JOHN J. AEBERLY, JR., Chief, Division of Ventilation, Department of Health, Chicago, Ill. (*Stereopticon Illustration.*)

Body **Temperature Regulation and Other Physiological Reactions in Their Relation to Atmospheric Conditions.** F. C. HOUGHTON, Director Research Laboratories, American Society of Heating and Ventilating Engineers, Pittsburgh, Pa.

SYMPOSIUM ON SCHOOL ROOM VENTILATION

Reports on **Schoolroom Ventilation Studies:**

a. *New Haven, Conn.*
LEONARD GREENBURG, PH.D., Yale University, New Haven, Conn.

b. *Cleveland, O.*
LYMAN W. CHILDS, M.D., Supervisor of Health Service, Board of Education, Cleveland, O.

c. *Chicago, Ill., Suburbs*
H. J. SHAUGHNESSY, PH.D., Department of Hygiene, University of Chicago, Chicago, Ill.

d. *Syracuse, N. Y.*
THOMAS J. DUFFIELD, Executive Secretary, New York State Commission on Ventilation, New York, N. Y.

Discussion. A. C. WILLARD, President American Society of Heating and Ventilating Engineers, Urbana, Ill., and C.-E. A. WINSLOW, DR.P.H., Yale University, New Haven, Conn.

Discussion.

Second Session—Tuesday p. m.

Report **of Committee on Milk Supply.** *Chairman*, H. A. WHITTAKER, Director, Division of Sanitation, Minnesota Department of Health, Minneapolis, Minn.

North Carolina's Milk Control Program. H. E. MILLER, Director, Bureau of Sanitary Engineering, State Board of Health, Raleigh, N. C.

Discussion. 10 minutes.

SYMPOSIUM ON STERILIZATION OF MILK CONTAINERS AND EQUIPMENT

Milking **Machines and Milk Plant Equipment.** M. J. PRUCHA, Professor of Dairy Products, University of Illinois, Urbana, Ill.

Milk **Utensils.** WILLIAM E. REID, Associate Professor of Dairy Manufactures, University of Missouri, Columbia, Mo.

Milk **Bottles.** LEWIS SHERE and GERALD L. HIEFT, Department of Health, Chicago, Ill.

SYMPOSIUM ON SHELLFISH SANITATION

The Federal Shellfish Control Program. R. E. TARBETT, Sanitary Engineer, U. S. Public Health Service, Washington, D. C.

Discussion. STEPHEN DEM. GAGE, Sanitary Engineer, State Board of Health, Providence, R. I., and ABEL WOLMAN, Chief Engineer, State Board of Health, Baltimore, Md.

Public Health Engineering Standards and Shellfish Sanitation. WILLIAM F. WELLS, Biological Engineer, North Atlantic Oyster Farms, Inc., West Sayville, L. I., N. Y.

Discussion. GEORGE W. FULLER, Consulting Engineer, Fuller and McClintock, New York, N. Y., and CARL SPEER, JR., Sanitary Engineer, Chicago, Ill.

Discussion.

Dinner Session—Tuesday

Third Session—Wednesday a. m.

SYMPOSIUM ON FINANCING WATER SUPPLY AND SEWERAGE PROJECTS

Financing Sewerage Improvements. LANGDON PEARSE, Sanitary Engineer, Chicago Sanitary District, Chicago, Ill.

Discussion. HARRY F. FERGUSON, Chief Engineer, State Department of Health, Springfield, Ill., and J. RALPH VAN DUYNE, Chief Engineer, Passaic Valley Sewerage Commission, Newark, N. J.

Financing Water Supply Improvements. WILLIAM H. DITTOE, Chief Engineer, Mahoning Valley Sanitary District, Youngstown, O.

Discussion. W. W. BRUSH, Chief Engineer, Bureau of Water, New York, N. Y., and A. K. WARREN, Chief Engineer, Sanitation District of Los Angeles County, Los Angeles, Calif.

Financing for Water Supply and Sewerage Improvements. GEORGE G. EARL, General Superintendent and Chief Engineer, Sewerage and Water Board, New Orleans, La.

Discussion. J. CLARK KEITH, Chief Engineer, Essex Border Utilities Commission, Windsor, Ont.

Watershed Sanitation. E. SHERMAN CHASE, Metcalf and Eddy, Boston, Mass.

Luncheon Session—Wednesday

Fourth Session—Thursday a. m.

SYMPOSIUM ON THE DISPOSAL OF PHENOL WASTES

Results Obtained in Phenol Waste Disposal under the Ohio River Basin Interstate Stream Conservation Agreement. F. HOLMAN WARING, Chief Engineer, State Department of Health, Columbus, O.

Discussion. WILLIAM L. STEVENSON, Chief Engineer, State Department of Health, Harrisburg, Pa., ELLIS S. TISDALE, Director, Division of Sanitary Engineering, State Department of Health, Charleston, W. Va., and C. A. HOLMQUIST, Director, Division of Sanitation, State Department of Health, Albany, N. Y.

Industry's Problem in the Disposal of Phenol Wastes. F. F. MARQUARD, Assistant General Manager, Carnegie Steel Company, Clairton, Pa., F. W. SPERR, JR., Director of Research, Koppers Company, Mellon

Institute, Pittsburgh, Pa., and C. L. WAGGONER, Superintendent, Coke Oven Plant, By-Products Coke Corporation, Chicago, Ill.

Biochemical **Oxidation of Phenolic Wastes.** FLOYD W. MOHLMAN, PH.D., Chief Chemist, Chicago Sanitary District, Chicago, Ill.

Discussion. WILLIAM A. RYAN, Chemist, Department of Public Works, Rochester, N. Y.

INDUSTRIAL HYGIENE

First Session—Tuesday p. m.

Industrial **Fatigue** (Including Report of Committee for the Study of Industrial Fatigue). *Chairman,* EUGENE LYMAN FISK, M.D., Medical Director, Life Extension Institute, New York, N. Y.

Mortality **Trends in the Industrial Population.** LOUIS I. DUBLIN, PH.D., Statistician, Metropolitan Life Insurance Company, New York, N. Y.

The **Outlook for Occupational Mortality Statistics.** LEON E. TRUESDELL, Chief Statistician for Population, U. S. Bureau of the Census, Washington, D. C.

Discussion. DEAN K. BRUNDAGE, U. S. Public Health Service, Washington, D. C., and EUGENE LYMAN FISK, M.D., Medical Director, Life Extension Institute, New York, N. Y.

Report **of Committee on Status of Silicosis.** R. R. SAYERS, M.D., Chief Surgeon, U. S. Bureau of Mines, Washington, D.C.

Luncheon Session—Wednesday

Report **of Committee on Occupational Morbidity Statistics.** WADE WRIGHT, M.D., Assistant Medical Director, Policy Holders Service Bureau, Metropolitan Life Insurance Company, New York, N. Y.

Round Table Discussion, **Industrial Fatigue.** (Also impressions of Fifth International Medical Congress on Industrial Accidents and Occupational Diseases, Budapest, September 2-8, and The Royal Institute of Public Health, Dublin, August 15-20, by EMERY R. HAYHURST, M.D., and others.)

The **Possible Relationship of Mutual Benefit Associations to the Health of Employes.**

Second Session—Thursday p. m.

Mobilizing **Mutual Benefit Associations to Include Health Activities.** MAGNUS W. ALEXANDER, President, National Industrial Conference Board, New York, N. Y.

Discussion. MEYER BLOOMFIELD, Consultant on Industrial Relations, New York, N. Y., WILLIAM A. SAWYER, M.D., Medical Director, Eastman Kodak Company, Rochester, N. Y., E. B. HUNT, Superintendent, Pennsylvania Railroad Voluntary Relief Department, Philadelphia, Pa., and VOLNEY S. CHENEY, M.D., Medical Director, Armour and Company, Chicago, Ill.

Report **of the Committee on the Status of Lead Poisoning in the United States for the Year Ending June 30, 1928.** CAREY P. MCCORD, M.D., and DOROTHY K. MINSTER, Industrial Health Conserv-

ancy Laboratories, and ROBERT KEHOE, M.D., University of Cincinnati, Cincinnati, O.

Report of Committee on Standard Practices in the Compensation of Occupational Diseases. A. J. LANZA, M.D., Assistant Medical Director, Metropolitan Life Insurance Company, New York, N. Y.

Report of Committee on Volatile Solvents. ALICE HAMILTON, M.D., Harvard School of Public Health, Boston, Mass.

Report of Committee on Skin Irritants. HENRY FIELD SMYTH, M.D., DR.P.H., Laboratory of Hygiene, University of Pennsylvania, Philadelphia, Pa.

Third Session—Friday a. m.

How Employe Magazines Can be Used to Promote Health. MEYER BLOOMFIELD, Consultant on Industrial Relations, New York, N. Y.

Extension of Industrial Hygiene by Tuberculosis Associations in the United States. BERNARD S. COLEMAN, Executive Secretary, Hudson County Tuberculosis League, Jersey City, N. J.

The Tuberculous Worker and His Placement in Industry. C. W. BERGQUIST, President, Chicago Tuberculosis Institute, Chicago, Ill.

Discussion. WADE WRIGHT, M.D., Assistant Medical Director, Policy Holders Service Bureau, Metropolitan Life Insurance Company, New York, N. Y., and EMERY R. HAYHURST, M.D., College of Medicine, Ohio State University, Columbus, O.

Health Education in an Industrial Plant. JOHN B. GIBSON, Director of Safety and Health, Western Electric Company, Chicago, Ill.

Public Health and Medical Work in a Large Coal Company. DANIEL J. KINDEL, M.D., Medical Director, The Consolidation Coal Company, Fairmont, W. Va. (*Stereopticon Illustration.*)

Discussion. LLOYD NOLAND, M.D., Chief Surgeon, Tennessee Coal, Iron and Railroad Company, Birmingham, Ala.

FOOD, DRUGS AND NUTRITION

First Session—Wednesday a. m.

Report of the Committee on Beverages. T. J. KING, Supervising Food Inspector, Department of Health, Chicago, Ill.

Report of the Committee on Fruits, Vegetables and their Products. *Chairman,* H. M. LOOMIS, U. S. Public Health Service, Washington, D. C.

Report of the Committee on Cereals and their Products. *Chairman,* F. C. BLANCK, PH.D., Bureau of Chemistry and Soils, Washington, D. C.

Report of the Committee on Meat, Fish and Shellfish. *Chairman,* CARL R. FELLERS, PH.D., Massachusetts Agricultural College, Amherst, Mass.

Report of the Committee on Nutritional Problems. *Chairman,* PROFESSOR HENRY C. SHERMAN, Department of Chemistry, Columbia University, New York, N. Y.

What We Should Strive for in Food Advertising. PROFESSOR E. V. MCCOLLUM, Johns Hopkins School of Hygiene and Public Health, Baltimore, Md.

Second Session—Thursday p. m.

Health **Significance of Small Amounts of Metals.** J. S. MCHARGUE.

Some **Aspects of Intestinal Bacteriology in Relation to Health.** PROFESSOR LEO F. RETTGER, New Haven, Conn.

Evaporated **Milk and Its Relation to Public Health.** FRANK E. RICE, Executive Secretary, Evaporated Milk Association, Chicago, Ill.

Ice **Cream Control.** FREDERICK W. FABIAN, Associate Professor of Bacteriology and Hygiene, Michigan State College, East Lansing, Mich.

The **Use of Ultra-violet Transmitting Glass.** WALTER H. EDDY, PH.D., Professor of Physiological Chemistry, Teachers College, Columbia University, New York, N. Y. (*Stereopticon Illustration.*)

Certificates **of Approval for Food Establishments Complying with Ordinances.** JAMES P. KILCOURSE, LL.B., Chief, Bureau of Food Inspection, Department of Health, Chicago, Ill.

CHILD HYGIENE

(These Sessions are Joint with the American Child Health Association.)

First Session—Wednesday a. m.

SCHOOL MEDICAL AND NURSING SERVICE

Sickness **and Absence Records in the School Health Program. Methods and Procedures and the Values Resulting.** O. B. NESBIT, M.D., Director of Medical Inspection, Public Schools, Gary, Ind.

The **Place of Sickness Records in the School Health Program.** SELWYN D. COLLINS, PH.D., Associate Statistician, U. S. Public Health Service, Washington, D. C. (*Stereopticon Illustration.*)

Discussion. HAVEN EMERSON, M.D., Department of Public Health Administration, Columbia University, New York, N. Y.

Business of Child Hygiene Section

Physical **Determinants of Individual Differences in Weight.** RAYMOND FRANZEN, PH.D., Research Director, School Health Study, American Child Health Association, New York, N. Y.

Discussion

Four-**Year Child Health Study of an American Community, A Report of Progress of an Investigation on Grosse Ile, Mich.** CHARLES A. WILSON, M.D., Merrill-Palmer School, Detroit, Mich. (*Stereopticon Illustration.*)

Discussion. Opened by E. V. MCCOLLUM, PH.D., Professor of Chemical Hygiene, School of Hygiene and Public Health, Johns Hopkins University, Baltimore, Md.

Second Session—Wednesday p. m.

How **Can We Improve Our Procedures for Correction of Physical Defects?** WALTER S. CORNELL, M.D., Director, Medical Inspection of Public Schools, Philadelphia, Pa.

The **Nurse's Activities to Obtain the Correction of Physical Defects.** ANN DICKIE BOYD, R.N., Supervisor of Nurses, Public Schools, Denver, Colo.

Discussion. FRED MOORE, M.D., Director Health Department of Public Schools, Board of Education, Des Moines, Ia.

What is the Teacher's Part in the Program to Get Physical Defects Corrected? GEORGIE B. COLLINS, Assistant Editor of Health Films, Eastman Teaching Films, Inc., formerly Director of Health Education, Public Schools, Malden, Mass.

Discussion

School Medical Service in a Continuation School. E. H. LEWINSKI-CORWIN, PH.D., Executive Secretary, Public Health Relations Committee, Academy of Medicine, New York, N. Y.

Discussion. EMMA MCKAY APPEL, M.D., Medical Examiner, Vocational Guidance Bureau, Board of Education, Chicago, Ill.

A Practical Method of Recording Physical Defects and Their Correction. LEON BANOV, M.D., Health Officer, Charleston, S. C.

Third Session—Thursday a. m.

DENTAL HYGIENE

What Habit, Attitude and Knowledge Objectives Should be Sought at Various Age Levels? Discussion Based on Mouth Hygiene Materials in *Health Behavior,* by Wood and Lerrigo, published by The Public School Publishing Company, Bloomington, Ill. HARRY S. THOMSON, S.D., M.D., Field Secretary, Canadian Dental Hygiene Council, Toronto, Ont.

Discussion.

Discussion on Dental Health Education Materials Designed for School Use Collected with the Coöperation of the American Dental Association. Criticisms and Suggestions from Point of View of Subject Matter. WILLIAM R. DAVIS, D.D.S., Director, Bureau of Mouth Hygiene, State Department of Health, Lansing, Mich.

Discussion

Dental Health Education Materials from Point of View of Educational Presentation and Usefulness. MARION O. LERRIGO, PH.D., New York, N. Y.

Discussion.

Summary and Comments. GUY S. MILLBURY, D.D.S., Dean, College of Dentistry, University of California, San Francisco, Calif.

PUBLIC HEALTH EDUCATION

Luncheon Session—Monday

High Spots in 1927-1928—New Ideas and successful methods.

Luncheon Session—Tuesday

Program for Health Education Training in Teachers' Colleges. MARY L. HAHN, State Department of Health, Springfield, Ill.

Dinner Session—Tuesday

Business Conference of Public Health Education Section (Closed Session)

Luncheon Session—Wednesday

Why **Some of the Exhibits Are Good—Constructive discussion of the scientific exhibits**

First Session—Wednesday p. m.

STEPS IN PLANNING A HEALTH EDUCATION AND PUBLICITY PROGRAM—PART I

An **Introduction to Planning.** MARY SWAIN ROUTZAHN, Russell Sage Foundation, New York, N. Y.

Objectives **of Publicity—On what basis are they selected?** HOWARD W. GREEN, Secretary, Cleveland Health Council, Cleveland, O.

Audiences**—How to select and classify them?** MARJORIE DELEVAN, Bureau of Education, Michigan Department of Health, Lansing, Mich.

The **Facts—How decide what is to be told?** C.-E. A. WINSLOW, DR.P.H., Professor of Public Health, Yale University, New Haven, Conn.

Second Session—Thursday a. m.

STEPS IN PLANNING A HEALTH EDUCATION AND PUBLICITY PROGRAM—PART II

The **Approach—How decide on the motives for conduct to which an appeal will be made?** FRANKLIN FEARING, Professor of Psychology, Northwestern University, Evanston, Ill.

The **Methods—On what basis should they be selected?** KATHRYNE M. RADEBAUGH, Executive Secretary, Hennepin County Tuberculosis Association, Minneapolis, Minn.

Examples **of Health Education and Publicity Programs—A review of current practice.** IAGO GALDSTON, M.D., Bureau of Health Education, New York Tuberculosis and Health Association, New York, N. Y.

(Mimeographed copies of sample programs available in advance at Information Desk and Education and Publicity Headquarters)

Luncheon Session—Thursday

Diphtheria **Campaigning—What is new? What is difficult?** MARIE F. KIRWAN, Tuberculosis and Public Health Committee, State Charities Aid Association, New York, N. Y.

PUBLIC HEALTH NURSING

First Session—Monday p. m.

Staff **Education—Means By Which a City Combined Official and Voluntary Nursing Services.** VIRGINIA GIBBES MCPHEETERS, R.N., Director of Public Health Nursing, Coöperative Nursing Association, Charlotte, N. C.

Discussion.

The **Health Officer's Responsibility for Staff Education.**

The **Educational Directors Responsibility.** JOSEPHINE F. GOLDSMITH, R.N., Director of Nurse Education, Department of Health, Syracuse, N. Y.

Common Interest Problems of State Directors of Public Health Nursing. EVA F. MACDOUGALL, R.N., State Board of Health, Indianapolis, Ind.

Discussion. ZOE MCCALEB, R.N., Director of Public Health Nursing, State Board of Health, Columbus, O., and PEARL MCIVER, R.N., Director of Public Health Nursing, State Board of Health, Jefferson City, Mo.

Luncheon Session—Wednesday

Second Session—Thursday p. m.

Section Business.

Public Health Nursing Report of Editorial Committee. MIRIAM AMES, R.N., John Hancock Life Insurance Company, Boston, Mass.

Report of Advisory Committee on Public Health Nursing. SOPHIE C. NELSON, R.N., John Hancock Life Insurance Company, Boston, Mass.

Report of Nominating Committee. ELIZABETH G. FOX, R.N., American Red Cross, Washington, D. C.

MEETINGS OF OTHER ORGANIZATIONS

The American Child Health Association will hold sessions jointly with the Child Hygiene and other Sections of the American Public Health Association and in addition will hold the following sessions:

HEALTH EDUCATION DIVISION OF THE AMERICAN CHILD HEALTH ASSOCIATION

Tuesday a. m.

Curriculum Construction for Health Education—A Continuing Coöperative Enterprise.

Discussion. CLAIR E. TURNER, DR.P.H., Professor, Department of Biology and Public Health, Massachusetts Institute of Technology, Cambridge, Mass.

Classroom Situations as Teaching Opportunities for Health Instruction. FLETA MCWHORTER, Supervisor of Health Education, Jefferson County Boards of Health and Education, Birmingham, Ala.

Science as a Channel for Health Instruction in Elementary Schools. ELIZABETH AMES, Director, Science and Arts, Public Schools, Gary, Ind.

AMERICAN CHILD HEALTH ASSOCIATION

Luncheon Session—Tuesday

Dinner Session—Tuesday

Dinner and Annual Business Meeting of the American Child Health Association.

ANNUAL CONFERENCE OF ILLINOIS HEALTH OFFICERS and PUBLIC HEALTH NURSES

First Session—Monday a. m.

Greetings. ISAAC D. RAWLINGS, M.D., Director, State Department of Public Health, Springfield, Ill., *Chairman.*

World **Health Intelligence.** FRANK C. BOUDREAU, M.D., Health Section, League of Nations, Geneva, Switzerland.

A State **Cancer Problem.** GEORGE H. BIGELOW, M.D., Commissioner of Public Health, Boston, Mass.

The Year's **Biggest Problem.** ARNOLD H. KEGEL, M.D., Commissioner of Health, Chicago, Ill., JOHN W. H. POLLARD, M.D., Commissioner of Health, Evanston, Ill., and W. H. NEWCOMB, M.D., Health Officer, Jacksonville and Morgan County, Ill.

Second Session—Monday p. m.

A County **Health Department at Work.** J. L. POMEROY, M.D., Health Officer, Los Angeles County, Los Angeles, Calif.

The Public **Health Nurse.** EUNICE H. DYKE, R.N., Director of Public Health Nursing, Toronto, Ont.

The Year's **Biggest Problem.** N. O. GUNDERSON, M.D., Commissioner of Health, Rockford, Ill., HOWARD A. ORVIS, M.D., Health Officer, Winnetka, Ill., and W. C. DIXON, M.D., Health Officer, Danville, Ill.

Third Session—Tuesday a. m.

World **Health Service.** C.-E. A. WINSLOW, DR.P.H., School of Medicine, Yale University, New Haven, Conn.

Health **Service in England.** GEORGE FREDERICK BUCHAN, M.D., President, Society of Medical Officers of Health, England.

The Year's **Biggest Problem.** GEORGE W. HAAN, M.D., Health Commissioner, Aurora, Ill., GEORGE D. HEATH, M.D., Health Director, Bloomington, Ill., and J. J. HOOD, M.D., Health Officer, Cicero, Ill.

THE WOMEN'S FOUNDATION FOR HEALTH

Wednesday Evening

A HEALTH-POSITIVE SYMPOSIUM

Chairman, LENNA L. MEANES, M.D., Medical Director, Women's Foundation for Health, New York, N. Y.

Health **Promotion versus Disease Prevention.** COURTENAY DINWIDDIE, Director, Child Health Demonstration Committee, New York, N. Y.

The **Place of the Director of Physical Education in the Field of Positive Health.** EDNA MUHLFELD, Assistant Director, Department of Physical Education, Women's Foundation for Health, New York, N. Y.

Work and **Play.** LILLIAN M. GILBRETH, PH.D., Montclair, N. J.

THE AMERICAN SOCIAL HYGIENE ASSOCIATION

Monday p. m.

THE PROGRAM FOR SYPHILIS RESEARCH IN THE UNITED STATES

Chairman, WILLIAM F. SNOW, M.D., General Director, American Social Hygiene Association, New York, N. Y.

Clinical **Research.** JOHN H. STOKES, M.D., Professor, Department of Dermatology and Syphilology, School of Medicine, University of Pennsylvania, Philadelphia, Pa.

Laboratory Research. WADE BROWN, M.D., Rockefeller Institute for Medical Research, New York, N. Y.

Statistical and Public Health Research. THOMAS PARRAN, M.D., Assistant Surgeon General U. S. Public Health Service, Washington, D. C.

General Session—Tuesday Evening

SOCIAL HYGIENE—ITS ACHIEVEMENTS AND ITS NEEDS

Chairman, C.-E. A. WINSLOW, DR.P.H., School of Medicine, Yale University, New Haven, Conn.

Speakers—REV. ALPHONSE M. SCHWITALLA, St. Louis University, School of Medicine, St. Louis, Mo., BASCOM JOHNSON, Director, Division of Legal and Protective Measures, American Social Hygiene Association, New York, N. Y., SOPHIE C. NELSON, R.N., John Hancock Life Insurance Company, Boston, Mass., and PROFESSOR MAURICE A. BIGELOW, Teachers College, Columbia University, New York, N. Y.

ILLINOIS SOCIAL HYGIENE ASSOCIATION

One-day Institute

Wednesday morning

Venereal Disease Clinic Management:

a. College clinics
b. Free clinics
c. Pay clinics

Discussion.

Luncheon

Wednesday afternoon

Sex Education.

Papers and conferences

Dinner

Wednesday evening

Problems of Prostitution and How We are Meeting Them.

(It is hoped that several trips may be made to various Chicago Clinics which are interested in the work of Social Hygiene.)

THE FOLLOWING ORGANIZATIONS WILL HOLD MEETINGS:

Association of Women in Public Health
Alumni of the University of Michigan and of other universities
Delta Omega
Conference of State Sanitary Engineers
State Laboratory Directors Association
American Association of School Physicians
Visiting Nurse Association of Chicago has arranged a banquet for nurses.
International Association of Dairy and Milk Inspectors will hold their annual meeting in Chicago, October 11-13.

ASSOCIATION NEWS

ANNUAL MEETING INFORMATION

Chicago Local Committee

EXECUTIVE COMMITTEE

Louis E. Schmidt, M.D., *Chairman*
Arthur E. Gorman, *Secretary*
Isaac A. Abt, M.D.
Volney S. Cheney, M.D.
Thomas R. Crowder, M.D.
William A. Evans, M.D.
Edwin O. Jordan, Ph.D.
Arnold H. Kegel, M.D.
Jacob M. Loeb.
Isaac D. Rawlings, M.D.

SUB-COMMITTEE CHAIRMEN

Louis E. Schmidt, M.D., Chicago Executive Committee
Jacob M. Loeb, Chicago Citizens' Committee
Volney S. Cheney, M.D., Finance Committee
William A. Evans, M.D., Reception Committee
Arthur E. Gorman, Publicity Committee
Arnold H. Kegel, M.D., Registration and Meeting Rooms Committee
Thomas R. Crowder, M.D., Inspection Trips Committee
Paul Hansen, Entertainment Committee
Mrs. Herman N. Bundesen, Ladies' Entertainment Committee
Samuel B. Plummer, M.D., Traveling Health Exhibits Committee
Isaac A. Abt, M.D., Membership Committee

FOR THE AMERICAN CHILD HEALTH ASSOCIATION

Mary E. Murphy
Sara B. Place, R.N.
Clifford G. Grulee, M.D.

TRIPS OF GENERAL INTEREST, SPECIFIC INFORMATION AND PLEASURE

Chicago offers visitors unusual opportunities to investigate practical public health programs, and elaborate plans have been made by the Chicago Local Committee for the entertainment of delegates and guests at the 57th Annual Meeting of the Association in Chicago next month.

In arranging these trips the Local Committee has scheduled some that will be of general interest to those attending the meeting and it has planned a series of trips of specific interest to the several groups of the American Public Health Association, the American Child Health Association and other organizations to be represented.

Among the 81 trips planned, 18 are scheduled trips, 7 of general interest, and 11 for the special groups, including laboratory technicians, nutritionists, public health nurses, child hygienists, welfare workers, social hygienists, industrial hygienists, public health engineers, food and drugs specialists, rural sanitarians, and vital statisticians.

All scheduled trips will be arranged at a time convenient for those most interested.

Listed among the scheduled trips are visits to hospitals and public institutions including Cook County Hospital, the Illinois Research Hospital, Municipal Contagious Disease Hospital, Daily News Sanitarium for Children and Mothers, Children's Memorial Hospital, Municipal Tuberculosis Sanitarium, the Medical Schools of Chicago University and Northwestern University; to dairy product plants including the Wanzer

Sunlight Milk, People's Ice Cream Company, the Bowman Dairy Company, the Borden Dairy Company and Christiansen Brothers; research laboratories of the Fire Underwriters, University of Chicago, and the City of Chicago Experimental Water Filtration Laboratory; Hull House Settlement, Columbus Park Infant Welfare Station, nursery schools, the Spaulding School for Convalescent Care of Poliomyelitis, prenatal and preschool clinics, Visiting Nurses Association, Sears Roebuck Company, Institute for Juvenile Research, Juvenile Court and Juvenile Detention Home of Cook County, venereal disease clinic of the Chicago Department of Health, International Harvester Company, Pullman Company, ventilation plant of Chicago Theater, Illinois Steel Company, Union Stock Yards, Chicago Experimental Water Filtration Plant, 68th Street Pumping Station and Chlorination Plant, Calumet Sewage Treatment Plant of Chicago Sanitary District, Chicago Produce Market, Chicago Cold Storage Warehouse, Cook County Dental Clinic, Des Plaines School of Health, Camp Remberg, and the statistical departments of the City of Chicago, Department of Health, Illinois Bell Telephone Company.

In addition to these scheduled trips the Local Committee has listed 63 places of general and special interest. Information regarding these trips will be printed in the final program and in the *Daily Bulletin* to be issued throughout the week of the meeting.

NOTE: A description of Hull House as a Health Center, The Visiting Nurse Association of Chicago and The Infant Welfare Society of Chicago will be described in the September issue of the *Child Health Bulletin*, published by the American Child Health Association.

VARIETY OF ENTERTAINMENT FOR WOMEN GUESTS

Women delegates and guests to the meeting will be guests of the Local Committee on trips to the Field Museum of Natural History and the Chicago Art Institute to be conducted by a special guide and lecturer, and on sight-seeing trips around Chicago stopping at places of interest enroute. The Chicago Park system affords several hours' delightful drive and this will be featured in the women's entertainment program.

They will be entertained at a tea at the Ida Noyes Hall, University of Chicago, which is considered one of the most beautiful and artistic buildings for college women's activities in the country. Another tea has been arranged by the Chicago Nurses' Association, and luncheons in the Marine Dining Room of the Edgewater Beach Hotel, at the Illinois Women's Athletic Club, the Medical Arts Club, in the Red Lacquer Room of the Palmer House, and still another in the Wedgewood Room of the store of Marshall Field and Company.

The women will have an opportunity to visit Chicago's leading department stores and specialty shops and attend a Fashion Show and linen demonstration arranged especially for them through the courtesy of Marshall Field and Company. There will be a bridge party one afternoon during the week at Hotel Stevens and also several theater parties.

AMERICAN ASSOCIATION OF SCHOOL PHYSICIANS TO MEET

The American Association of School Physicians will hold its meetings at Hotel Stevens, Chicago, Ill., October 15 at 9:30 a. m., 2:00 and 6:00 p. m. The morning and afternoon sessions will be held in private Dining Room No. 1, and the evening session which is to be a dinner meeting will be held in West Ball Room and Assembly. An invitation is extended to all school physicians to attend the meetings and participate in the program.

HOTELS

A number of the Chicago hotels are listed, with their rates. This is for the convenience of delegates who desire to plan ahead. The map on page 1162 shows the location of these hotels together with many of the places of interest to vistiors. Headquarters for the Annual Meeting will be the Hotel Stevens, shown as number 1 on the map.

Applications for hotel reservations should be made directly to the hotels. A blank is supplied here for your convenience.

SUGGESTED AMENDMENT TO THE CONSTITUTION

At the recommendation of the Committee on Constitution, the following amendment will be offered for adoption at the Chicago meeting:

ARTICLE III, Section A, Part 2, at the end of the second paragraph after the word "elected" add the words "by the Governing Council."

HOTEL RATES

HOTEL	SINGLE		DOUBLE	
	With Bath	Without Bath	With Bath	Without Bath
Auditorium	$3.40– 6.00	$2.00–3.00	$5.00– 8.00	$3.00–5.00
Blackstone	5.00–14.00	4.00–5.00	6.00–16.00	5.00
Congress	4.00–10.00	3.00–5.00	6.00–12.00	4.00–6.00
Drake	5.00–10.00		6.00–14.00	
Edgewater Beach	4.00– 6.00		6.00– 8.00	
LaSalle	3.50– 6.00	2.50–3.50	5.00– 8.00	4.00–5.00
Morrison	2.50–10.00		5.00–12.00	
New Bismarck	3.50– 6.00	2.50	5.00–10.00	4.00
Palmer House	4.00–10.00		7.00–12.00	
Sherman	3.00– 7.00	2.50–3.00	4.00– 8.00	4.00–5.00
Stevens	3.00–10.00		4.50–10.00	

(*Cut off on this line*)

HOTEL RESERVATION BLANK

To .....
(Name of Hotel)

Please reserve for me ..... rooms for ..... persons for the A. P. H. A. Meeting. (Cross [X] is placed after my preference.)

Single room ..... Double room .....

Maximum rate per day for room $ ..... Minimum rate per day for room $ .....

I expect to arrive Oct. ..... If date of arrival is changed I will notify you at least 24 hours in advance.

Please acknowledge this reservation.

Name .....

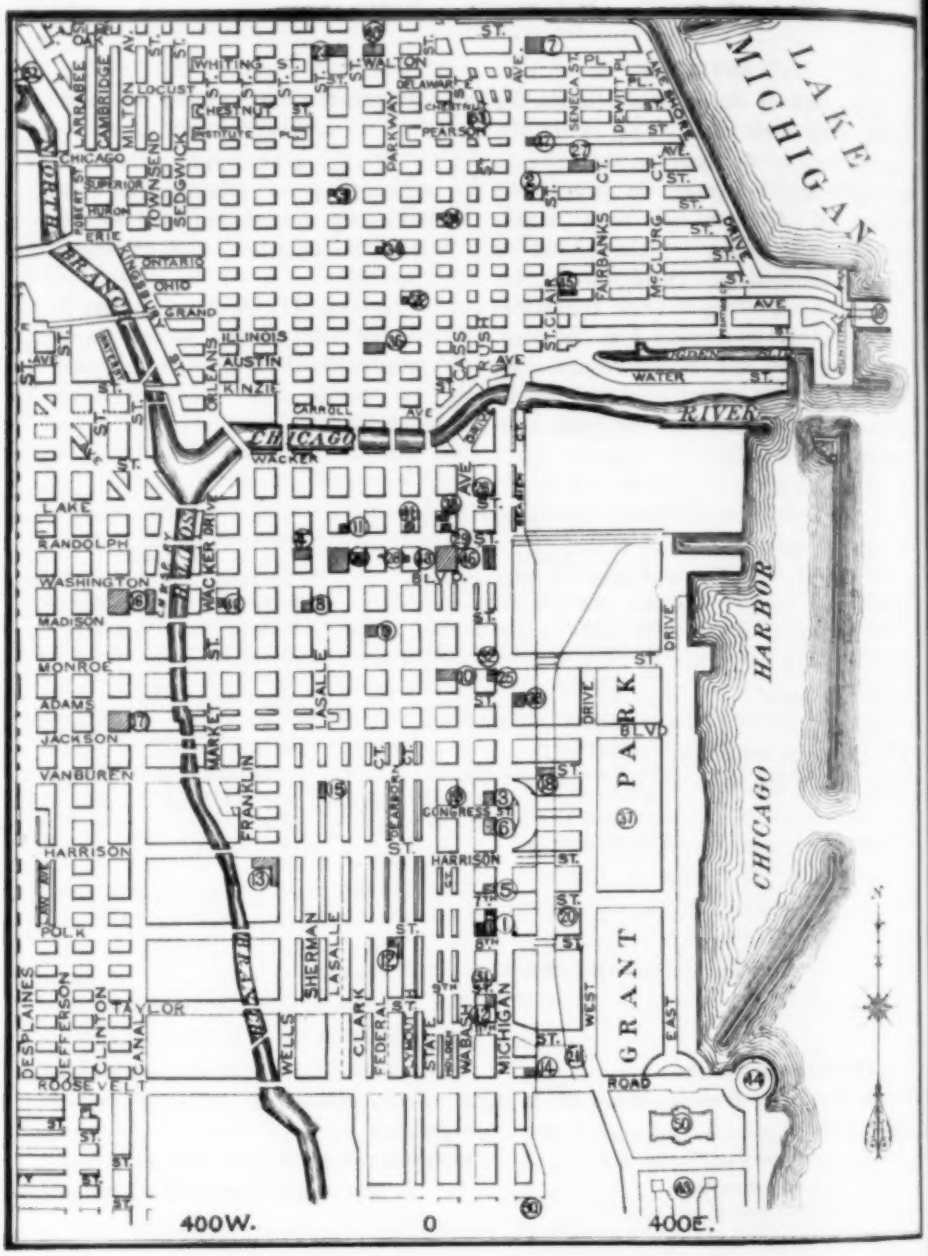
Street Address .....

City ..... State .....

If this blank is addressed to the Hotel Stevens please check one of the following:

..... 1. If accommodations are unavailable, please make reservation for me at one of the following hotels .....

..... 2. If accommodations are unavailable, please advise me.



DOWNTOWN SECTION OF CHICAGO

KEY TO MAP

Hotels

1. Stevens (Headquarters)
2. Allerton Club
3. Auditorium
4. Bismarck
5. Blackstone
6. Congress
7. Drake
8. La Salle
9. Morrison
10. Palmer House
11. Sherman

Railroad & L. Stations

12. Dearborn St.
13. Grand Central (B & O)
14. Illinois Central
15. La Salle St.
16. Northwestern

Railroads and L. Stations (cont.)

17. Union
18. Van Buren St. (I. C. Suburban)
19. Congress "L"

Traveling Health Exhibits

20. Automobile exhibits
21. Railroad exhibits

Medical & Welfare Institutions

22. American Medical Assn. Headquarters, 535 N. Dearborn St.
23. Henrotin Hospital, 939 N. La Salle St.
24. Illinois Social Hygiene League Headquarters, 9 E. Huron St.
25. Illinois State Assn. of Graduate Nurses, 116 S. Michigan Ave.
26. Infant Welfare Socty., 207 N. Wabash Ave.
27. Northwestern University School of Medicine, Chicago Ave.
28. Public Health Institute (men), 159 N. Dearborn St.
29. Public Health Institute (women), 72 E. Randolph St.
30. St. Luke's Hospital, 1439 So. Michigan Ave.
31. St. Vincent's Maternity Hospital, 721 N. La Salle St.
32. Visiting Nurses Assn. Headquarters, 104 S. Michigan Ave.

Other Points of Interest

33. Art Institute
34. Chicago Historical Assn.
35. City-County Bldg.
36. Criminal Court and Jail
37. Buckingham Memorial Fountain
38. Chicago Theatre
39. Municipal Pier
40. Newberry Library
41. Oriental Theatre
42. Sanitary District of Chicago Headquarters
43. Soldiers Field
44. Shedd Aquarium
45. Underwriters Laboratory
46. Chicago Public Library
47. Chicago Ave. Pumping Station
48. Marshall Field & Co.
49. Iroquois Hospital, 23 N. Market St.
50. Field Museum
51. Sanitary District of Chicago Laboratories, 845 South Wabash Ave.
52. Chicago Garbage Incinerator
53. Illinois Women's Athletic Assn.

REDUCED RAILROAD RATES

Persons attending the 57th Annual Meeting of the Association and related meetings in Chicago, October 15-19, will be granted a rate of one and one-half times a single fare by the railroads from the starting point to Chicago and return.

To obtain the reduced rate it is necessary to obtain from the ticket agent a reduced fare certificate when purchasing your ticket for Chicago. This reduction is available to all delegates and members of their families attending the Annual Meeting of the American Public Health Association, the American Child Health Association, the American Social Hygiene Association, the International Association of Dairy and Milk Inspectors and other meetings being held at the same time and place.

Ask for a certificate for the meeting of the A.P.H.A. and related societies. This certificate when validated by the Executive Secretary of the A.P.H.A. at the Chicago meeting will entitle the purchaser to a return ticket at half fare.

Detailed information regarding railroad rates and transportation will be sent to members of the Association in a letter from the Executive Secretary the first week in September.

RAILROAD RATES FROM VARIOUS CENTERS TO CHICAGO

	Regular Rate One Way	Special Rate Round Trip	Lower Berth	Upper Berth
Atlanta, Ga.	$26.72	$40.08	$8.25	$6.60
Baltimore, Md.	27.78	41.67	8.25	6.60
Boston, Mass.	36.73	55.10	10.13	8.10
Buffalo, N. Y.	18.81	28.22	5.63	4.50
Cincinnati, O.	10.26	15.39	3.75	3.00
Cleveland, O. (via Orrville)	12.71	19.07	3.75	3.00
Dallas, Tex.	34.36	51.54	10.50	8.40
Denver, Colo.	37.28	55.92	10.88	8.70
Detroit, Mich.	9.81	14.72	3.75	3.00
Indianapolis, Ind.	6.62	9.93	3.75	3.00
Jacksonville, Fla.	38.95	58.43	12.00	9.60
Kansas City, Mo.	16.54	24.81	4.50	3.60
Los Angeles, Calif.	79.84	119.76	23.63	18.90
Louisville, Ky.	10.80	16.20	3.75	3.00
Memphis, Tenn.	19.58	29.37	5.63	4.50
Minneapolis, Minn.	14.66	21.99	3.75	3.00
Nashville, Tenn.	16.32	24.48	4.50	3.60
New Orleans, La.	33.76	50.64	10.13	8.10
New York, N. Y.	32.70	49.05	9.00	7.20
Omaha, Neb.	17.93	26.90	4.50	3.60
Philadelphia, Pa.	29.46	44.19	8.25	6.60
Pittsburgh, Pa.	16.88	25.32	4.50	3.60
Portland, Ore.	77.21	115.82	23.63	18.90
Salt Lake City, U.	55.07	82.61	15.38	12.30
San Francisco, Calif.	79.84	119.76	23.63	18.90
Seattle, Wash.	77.21	115.82	23.63	18.90
St. Louis, Mo.	10.41	15.62	3.75	3.00
Toronto, Can.	17.71	26.57	5.63	4.50
Washington, D. C.	27.78	41.67	8.25	6.60

NOMINATIONS FOR THE GOVERNING COUNCIL

IN accordance with the By-Laws as amended in October, 1926, the Nominating Committee reports the following nominations for the Governing Council. The Constitution provides that "upon the petition of twenty-five Fellows, the Nominating Committee shall add the name of any Fellow to this list, provided such petition is received 15 days before the Annual Meeting."

The ten Fellows receiving the highest number of votes on a written ballot cast by the Fellows present and voting at the Annual Meeting in Chicago, will be elected for the 3-year term, 1928-1931.

Richard A. Bolt, M.D.,
Assistant Professor of Child Hygiene,
University of California,
Berkeley, Calif.

Hugh S. Cumming,
Surgeon General,
U. S. Public Health Service,
Washington, D. C.

Michael M. Davis, Ph.D.,
New York, N. Y.

W. J. V. Deacon, M.D.,
State Health Department,
Lansing, Mich.

J. G. Fitzgerald,
Connaught Laboratories,
University of Toronto,
Toronto, Ont.

Elizabeth G. Fox, R.N.,
American Red Cross,
Washington, D. C.

Leslie C. Frank, C.E.,
U. S. Public Health Service,
Montgomery, Ala.

Lee K. Frankel, Ph.D.,
2nd Vice-President,
Metropolitan Life Insurance Company,
New York, N. Y.

Norman MacL. Harris, M.B.,
Chief, Laboratory of Hygiene,
Department of Health,
Ottawa, Ont.

George D. Lummis, M.D.,
Middletown, O.

Professor, E. V. McCollum,
Johns Hopkins School of Hygiene and
Public Health,
Baltimore, Md.

A. T. McCormack, M.D.,
State Health Officer,
Louisville, Ky.

J. W. S. McCullough, M.D.,
Provincial Board of Health,
Toronto, Ont.

Sophie C. Nelson, R.N.,
Visiting Nurse Service,
John Hancock Mutual Life Insurance Co.,
Boston, Mass.

Stanley H. Osborn, M.D.,
State Health Commissioner,
Hartford, Conn.

George T. Palmer, D.P.H.,
American Child Health Association,
New York, N. Y.

Langdon Pearse,
Winnetka, Ill.

Roger G. Perkins, M.D.,
Cleveland, O.

J. L. Pomeroy, M.D.,
County Health Department,
Los Angeles, Calif.

Watson S. Rankin, M.D.,
Duke Endowment,
Charlotte, N. C.

Mazÿck P. Ravenel, M.D.,
University of Missouri,
Columbia, Mo.

Evart G. Routzahn,
Russell Sage Foundation,
New York, N. Y.

William P. Shepard, M.D.,
Assistant Secretary, Welfare Division,
Metropolitan Life Insurance Company,
San Francisco, Calif.

William F. Snow, M.D.,
General Director,
American Social Hygiene Association,
New York, N. Y.

James A. Tobey, Dr.P.H.,
Borden Sales Company,
New York, N. Y.

S. W. Welch, M.D.,
State Health Commissioner,
Montgomery, Ala.

H. A. Whittaker,
State Board of Health,
Minneapolis, Minn.

C. F. Wilinsky, M.D.,
Health Department,
Boston, Mass.

Linsly R. Williams, M.D.,
Director, New York Academy of Medicine,
New York, N. Y.

NOMINATING COMMITTEE

Edwin O. Jordan, *Chairman*

Walter H. Brown — John Sundwall
A. J. Chesley — C.-E. A. Winslow

NEW MEMBERS

Victoriano Agostini, M.D., Havana, Cuba, Chief of School Hygiene

Ada H. Arlitt, Ph.D., Cincinnati, O., Professor of Child Care and Training, University of Cincinnati

A. L. de Barros Barreto, M.D., Dr.P.H., Sao Salvador, Bahia, Brazil, Director State Board of Health (Assoc.)

Miriam Birdseye, A.M., Washington, D. C., Extension Nutritionist, U. S. Department of Agriculture

Hazel E. Branch, Ph.D., Wichita, Kan., Teacher in Preventive Medicine

Harvey J. Burkhart, D.D.S., Rochester, N. Y., Director Rochester Dental Dispensary

Francis L. Burnett, M.D., Boston, Mass., Research in Nutrition

Mrs. William H. Carpenter, R.N., Salem, Va., Community Nurse

Thomas J. Claffy, Chicago, Ill., Chief of Plumbing Division, Department of Health

Lydia Clark, Columbus, O., Professor of Physical Education, Ohio State University

Timothy R. Crowe, Chicago, Ill., President Sanitary District of Chicago

Matthew A. DeLaney, Manila, P. I., Medical Officer, U. S. Army

Chester F. Drake, D.Sc., Aspinwall, Pa., Superintendent Pittsburgh Filtration Plant

Herbert C. Ellis, B.S., Detroit, Mich., Associate Structural Engineer, Detroit Water Board

Robert B. Faus, M.D., Honolulu, T.H., Director Emergency Hospital

Morris Fishbein, M.D., Chicago, Ill., Editor *Journal of American Medical Association* and *Hygeia*

Helen W. Ford, Manhattan, Kans., Head, Department of Child Welfare and Euthenics, Kansas State Agricultural College

Julio Freijanes, M.D., C.P.H., Guadalajara, Spain, Inspector Provincial se Sanidad, Gobierno Civil (Assoc.)

Marie E. Fuller, R.N., Providence, R. I., Industrial Nurse

Melvin S. Graul, Chicago, Ill., (Assoc.)

George A. Hastings, New York, N. Y., Assistant Secretary, State Charities Aid Association

Scott W. Hollis, M.D., Abilene, Tex., City and County Health Officer

Emily M. Hopkins, R.N., Logan, O., Public Health Nurse, Board of Health

Omar C. Hopkins, S.M., Atlanta, Ga., Junior Assistant Sanitary Engineer, U. S. Public Health Service

Wayne E. Ishyam, Los Angeles, Calif., Junior Sanitary and Food Officer

Harvey P. Jones, B.C.E., Toledo, O., Consulting Sanitary Engineer

Frank J. Keis, Fort Lauderdale, Fla., Consulting Engineer

William H. Kelly, M.D., Sanford, Me., City Health Officer

Eva Kingelin, R.N., Milwaukee, Wis., Industrial Nurse, Koehring Company

George F. Lee, Johnstown, Pa., Chemist and Bacteriologist

Harry G. Lindquist, M.S., Amherst, Mass., Instructor in Dairying, Massachusetts Agricultural College

Eva F. MacDougall, R.N., A.B., Indianapolis, Ind., Director Division of Public Health Nursing, State Board of Health

Merrill J. Mack, M.Sc., Amherst, Mass., Assistant Professor of Dairying, Massachusetts Agricultural College

J. G. McMaster, M.D., Florence, S. C., City Health Officer

Major John I. McWilliams, Pine Camp, Great Bend, N. Y., Construction and Sanitary Engineer

Fred L. Moore, M.D., Blountville, Tenn., Director, Sullivan County Health Unit

Robert P. Myers, Ph.D., M.S., Evansville, Ind., Bacteriologist, Research Laboratory, Mead, Johnson & Company

Henry C. Niblack, M.D., Chicago, Ill., Chief Bureau of Child Welfare, Department of Health

Charles M. Pearce, M.D., McAlester, Okla., Superintendent of Health, Pittsburg County

Anne F. Pritchett, Hannibal, Mo., Red Cross Public Health Nurse

Enrico Rangel, M.D., Rio de Janeiro, Brazil, Assistant in Vital Statistics, Department of Public Health (Assoc.)

Margaretta W. Reeve, Philadelphia, Pa., Campaign Director, National Congress of Parents and Teachers

Esther L. Richards, M.D., D.Sc., Baltimore, Md., Associate Professor of Psychiatry, Johns Hopkins Hospital, and Lecturer in Mental Hygiene, Johns Hopkins University

Jane D. Rippin, New York, N. Y., Director of Section on Women and Girls of the War and Navy Department, Commission on Training Camp Activities, Girl Scout Health Program

Clyde R. Salmons, D.D.S., Hartford, Conn., Chief Mouth Hygiene Department, Child Hygiene Bureau, State Department of Health

Harriet J. Sherman, R.N., Jacksonville, Fla., Field Supervisor Bureau of Child Hygiene and Public Health Nursing, State Board of Health

Irene M. Silesky, Minneapolis, Minn., Student of Public Health, University of Minnesota

Mildred G. Smith, New York, N. Y., Staff Associate, National Society for the Prevention of Blindness

Mahidol Songkla, M.D., C.P.H., Bangkok, Siam, Resident Physician and Pediatrician, Siriraj Hospital, Chulalongkorn University (Assoc.)

Alice M. Spangler, R.N., Lebanon, Pa., Nurse

Ellen E. Stevens, San Luis Obispo, Cal., Public Health Nurse, San Luis Obispo County Health Department

Henry Storgaard, M.D., Yakima, Wash., County and City Health Officer

James P. Stowe, Charlotte, N. C., Member State Board of Health

Ira C. Tyndall, M.D., Berlin, Md., Health Officer, Worcester County

William I. Van Arnum, Ph.G., Youngstown, O., Chemist and Bacteriologist and Superintendent of Filtration Plant

Rodrigo Varo, M.D., C.P.H., Lerida, Spain, Provincial Health Officer, Gobierno Civil (Assoc.)

Homer C. Vernon, Los Angeles, Calif., Junior Sanitary Inspector

George I. Wallace, Ph.D., Urbana, Ill., Teacher of Epidemiology, University of Illinois

F. Edward Whitehead, Ph.G., Trenton, N. J., Sanitary Chemist, Bureau of Engineering, State Department of Health

Charlotte Whitton, M.A., Ottawa, Canada, Executive Secretary Canadian Council on Child Welfare

Marion C. Woodbury, R.N., Great Barrington, Mass., Director Visiting Nurse Association

DECEASED MEMBERS

J. Ross Snyder, M.D., Birmingham, Ala. Member elected 1919

John D. McCarthy, M.D., New York, N. Y. Member elected 1928

APPLICATION FOR FELLOWSHIP

FOOD, DRUGS AND NUTRITION: Timothy J. King, M.D., Chicago, Ill.

LABORATORY: Frank E. Greer, Chicago, Ill.

CHILD HYGIENE: Estella F. Warner, M.D., Salem, Ore.

UNAFFILIATED: Louis E. Schmidt, M.D., Chicago, Ill.

DR. LOUIS I. HARRIS RESIGNS

LOUIS I. Harris, M.D., has resigned as health commissioner of New York City to become consultant to the National Dairy Products Corporation in establishing a medical and sanitary service.

Dr. Harris was appointed health commissioner January 1, 1926, by Mayor James Walker. Before resigning Dr. Harris had completed 20 years' service with the New York City Health Department, and he will receive a pension of $5,000.

Dr. Harris is a Fellow of the A.P.H.A. and a member of the Committee on Ventilation, and of the Council of the Health Officers Section.

On August 18, Shirley W. Wynne was appointed by Mayor Walker to succeed Dr. Harris.

GEORGE W. PUTNAM ENGAGED AS RESEARCH ENGINEER

GEORGE W. Putnam, Fellow, A. P. H. A., has been granted a year's leave of absence from the position of Chief, Bureau of Dairy Products, Chicago Health Department, and is now engaged as Research Engineer with The Creamery Package Manufacturing Company with headquarters in Chicago.

DR. S. W. WELCH DIES

S. W. Welch, M.D., State Health Officer of Alabama since 1917, and past president of the State and Provincial Health Authorities of North America, died of heart disease in Montgomery, Ala., on August 22. He was the author of several bills amending the medical laws of Alabama. Dr. Welch has been a member of the A. P. H. A. since 1917 and a Fellow since 1922.

PUBLIC HEALTH ADMINISTRATION

HENRY F. VAUGHAN, D. P. H.

Mortality and Morbidity in Relation to Latitude—In the densely populated sections of the country will be found a greater concentration of measles, diphtheria and scarlet fever in the early years of life. This has previously been demonstrated not only with respect to these diseases, but also to whooping cough and anterior poliomyelitis.

This tendency for measles and probably whooping cough seems to be independent of latitude or climate, but in diphtheria and scarlet fever, and apparently in poliomyelitis, the age distribution of deaths is found to be affected by another tendency, namely, a higher concentration in early childhood in tropical and sub-tropical climates. The explanation is offered that the greater concentration of diphtheria and scarlet fever in the early ages in tropical climates may be due to early and widespread immunity of the populations concerned. Subclinical infection would, therefore, be greater in the warm climates. This viewpoint is supported by other facts including the results of the Schick and Dick tests in tropical areas. The same explanation may hold for poliomyelitis.—James A. Doull, Variations in the Age Distributions of Mortality and Morbidity from Diphtheria, Scarlet Fever and Certain Other Diseases in Relation to Latitude, *Am. J. Hyg.*, VIII: 633 (July), 1928.

Diphtheria Prevention in Nurses—An accurate account has been kept of the incidence of diphtheria and scarlet fever among student nurses at the Durand Hospital of the John McCormick Institute for Infectious Diseases in Chicago since 1913. During the first few months after the opening of the hospital in March, 1913, no Schick test was employed on student nurses, and 18.4 per cent contracted diphtheria.

From October, 1914, to January, 1921, the Schick test was employed and antitoxin was given to most of the susceptibles. In the susceptible group who received antitoxin only 7.2 per cent contracted diphtheria as compared with 25 per cent who contracted diphtheria in the group of susceptibles not given antitoxin.

Beginning with January, 1921, toxin-antitoxin has been given to susceptibles. Among the susceptibles immunized to a negative test before entering the service of the institution only 0.6 per cent have contracted diphtheria. This represents but a single case in a total of 159 nurses.

The percentage of student nurses contracting scarlet fever and sore throat has decreased from 17 to 12.4 since the employment of the Dick test and immunization of susceptibles.—L. Hektoen and C. Johnson, Prevention of Diphtheria and Scarlet Fever in Nurses, *J. Prev. Med.*, II: 289 (July), 1928.

Epidemiology of Diphtheria—It has been recognized that the establishment of an infectious disease depends first upon the presence of the specific parasitic cause, and secondly, the susceptibility of the host. The degree of susceptibility determines whether the individual shall succumb to the disease or apparently remain healthy. Frost discusses a third result intermediate between these two—that is, the establishment of infection without manifest symptoms of the disease. He endeavors to establish a ratio for diphtheria between infections which result in the disease itself, and infections which result in

the establishment of specific immunity without the disease.

His figures are for the most part from a selected area in the City of Baltimore. The ratio may vary in relation to age, to race, to the circumstances of known exposure, and to the factors which have not been subject to analysis. The ratios obtained in Baltimore are obviously different from those obtained in other communities. Nevertheless, for the conditions of the study it may be stated that the demonstrable specific immunizations are to the recognizable case as 6 or 8 is to 1.

In response to the question of how does the frequency of bacteriologically demonstrable infection with (virulent) diphtheria bacilli compare respectively with the frequency (a) of clinical diphtheria, and (b) of specific immunization as indicated by the Schick test, the author concludes that in a representative urban population, in the broad age groups considered, bacteriologically demonstrable carrier infections are to clinical diphtheria roughly as 40 or 50 is to 1. —W. H. Frost, Infection, Immunity and Disease in the Epidemiology of Diphtheria, *J. Prev. Med.*, II, 325, July, 1928.

Visible Record Display Cabinet—In order to enable the health administrator to keep in a compact and attractive manner statistical information concerning the functioning of his department, which he may desire to use for demonstration purposes, the Ohio State Health Department is encouraging the use of a Visible Record Display Cabinet.

The visible display cabinet showing cumulative records of a health department for a period of years on the basis of the A.P.H.A. *Appraisal Form* is the logical outgrowth of the monthly check sheet* devised by Dr. Harry H. Mustard, Director, Child Health Demonstration, Murfreesboro, Tenn.

The scheme for keeping yearly records available as a means for easily transporting them has been developed by Dr. Porter Crawford, District Health Commissioner, Troy, O., and Dr. E. R. Shaffer, Chief, Bureau of Local Health Organization, Ohio State Department of Health.

For the cabinet which is shown in the accompanying cut the Ohio State Health Department is having printed a standard form of report card similar to the sample shown, consisting of 6 printed cards and 4 blank cards. The printed cards are for the purpose of tabulating the data relative to the various activities, and the blank cards are provided for the purpose of constructing graphs from local data at the pleasure of the local health commissioner. The State Health Department is endeavoring to have one of these cabinets installed in the office of each full-time health organization.

One of the interesting features pertaining to the prescribed form is that it is almost an exact duplicate of the department's annual report form which is based upon the survey portion of the *Appraisal Form* for city and rural health districts, recommended by the Committee on Administrative Practice of the American Public Health Association.

Inasmuch as this Visible Record Display Cabinet is portable, it is very convenient to transport within various points of a local health district, from which the health commissioner or other speaker may give a constructive lecture, and at the same time demonstrate the statistics and other data that would be available.

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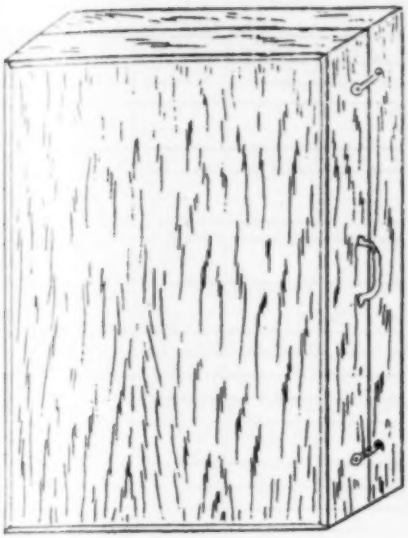
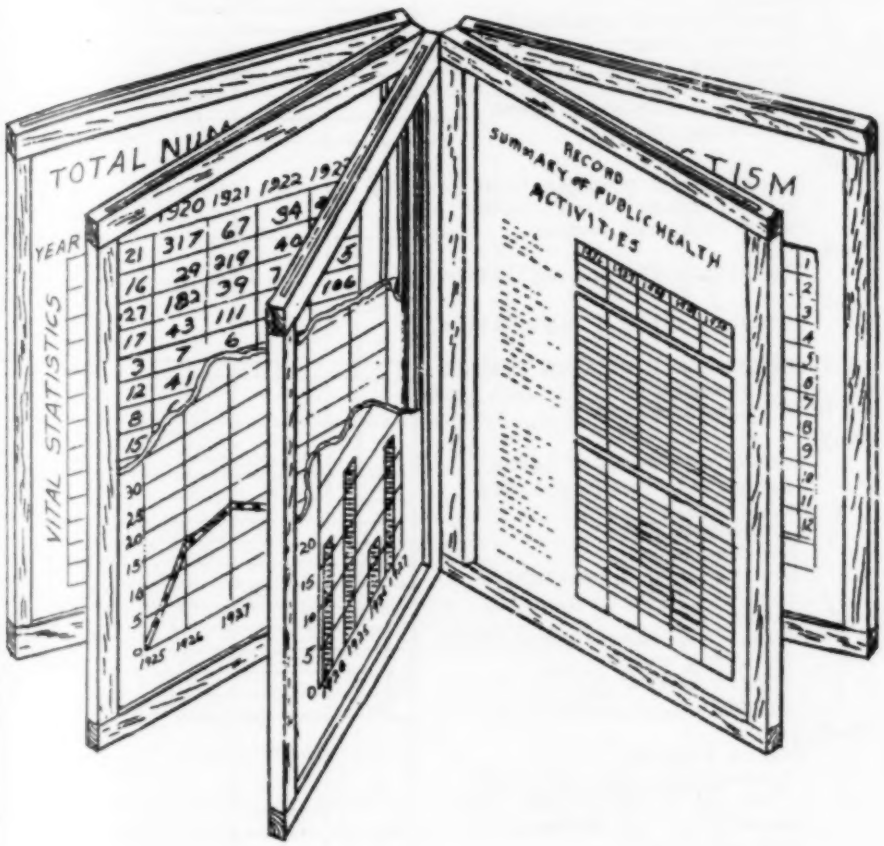
* See A Suggested Monthly Check Sheet, *A. J. P. H.*, 18:3, 300 (Mar.), 1928.



DISPLAY CASE FOR HEALTH RECORDS

Outside dimensions, 15" wide, 21" high, and 4" deep
Contains 5 frames, dovetailed to hold card 14¼" wide x 18¼" high, inserted through slot in top of frame
Frames hinged together with pivot for Central support
Removable from outside case
Case provided with hinged door, clasps or fasteners, two slotted supports for fastening to wall, and carrying handle
Constructed of red gum, mahogany finish, inside and out

The frames of the cabinet will accommodate cards 14¼" wide by 18¼" high. The cabinets are manufactured at the furniture department of the Ohio State Reformatory, constructed from red gum wood, finished in mahogany and may be purchased through the Ohio State Health Department.



_____GENERAL HEALTH DISTRICT

10 Year Record

	1925	1926	1927	1928	1929
POPULATION					
Official estimate					
Local estimate					
Classification of -					
Percent Native Born					
" Colored					
" Foreign Born					
A - VITAL STATISTICS					
Standard Score					
Performance					
A-1					
Deaths					
Rate					
Births					
Rate					
Stillbirths					
Deaths from -					
Infants - under 1 mo.					
" 1 mo. to 1 yr.					
" mortality rate					
Acute Ant. Poliomyelitis					
Diarrhea Ent. -under 2 yrs.					
Diphtheria					
Measles					
Meningococcus meningitis					
Scarlet fever					
Smallpox					
Typhoid fever					
Tuberculosis--All forms					
Whooping cough					
A-2					
Checking and verification of certificates of deaths with reported cases					
A-4					
Classification & compilation					
A-5					
Interpretation & application					
B - COMMUNICABLE DISEASE CONTROL					
Standard Score					
Performance					
B-1					
Number of reported cases					
Acute Ant. Poliomyelitis					
Diphtheria					
Influenza					
Measles					
Meningococcus meningitis					
Scarlet fever					
Smallpox					
Typhoid & Paratyphoid fever					
Whooping cough					
Tuberculosis					
Others					
B-2					
Record Keeping					
Epidemiological case histories of major com. dis.					
Correlation of information					
Spot maps kept					
Chronological charts					

LABORATORY

C. C. YOUNG

FERMENTATION TUBE

GEORGE G. SCHAUT

Chief Chemist, Bureau of Water, Philadelphia, Pa.

THE one piece type fermentation tube has always been more popular than the two-piece tube and is used with or without a pedestal base. When used without an integral base, the tube must be supported by some external means as a rack or clamp, whereas the type with the pedestal base is very fragile and the breakage excessive.

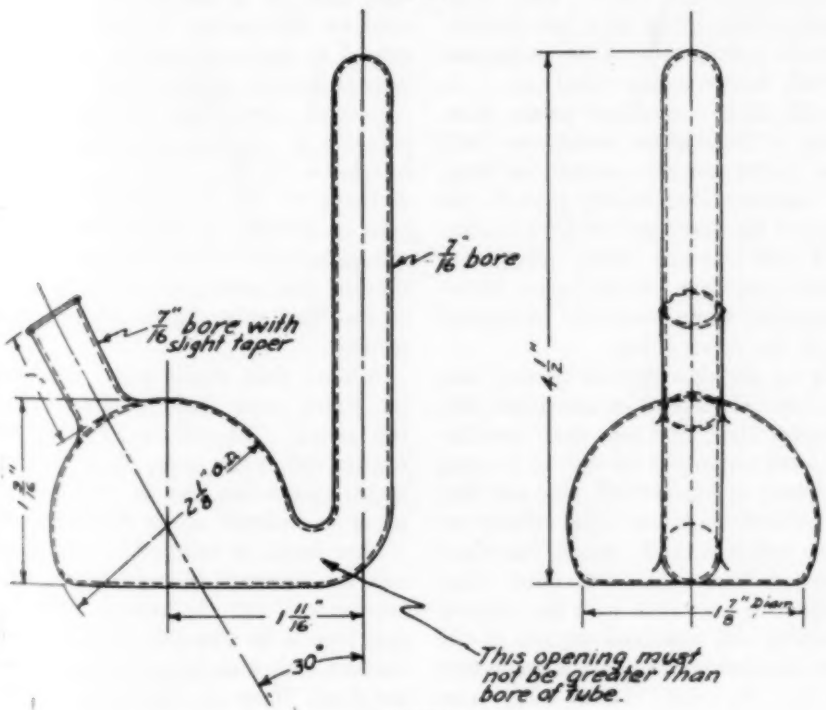
It has long been the desire of laboratories using the pedestal type to find some way of stopping the breakage, for the writer has found in a laboratory purchasing 2400 a year the breakage in shipment alone was 10 to 15 per cent, a 10 per cent breakage upon first handling, and also a 10 per cent upon first sterilization. With this constantly in mind, the writer designed a tube (patent applied for), the type of which is shown in Figure I.

This is an integral piece of apparatus

FIGURE I

FERMENTATION TUBE

GLASS



and is used just the same as any Smith tube. This type of tube has been in use in our laboratory for some time and is found to be far superior to any fermentation tube at present on the market. By simply increasing the size of the bulb, it is possible to make tubes to contain quantities of inoculating water, of 50 and 100 c.c. Heretofore, no tube was available for 100 c.c. of water in one single inoculation.

The advantages of this type of tube are:

1. One piece tube
2. Requires no external support
3. Greater stability
4. Ease of handling
5. Not fragile
6. Less breakage
7. Increases the capacity of any incubator
8. May be manufactured in any size
9. Up to 10 per cent of gas is not lost in the arm if the tube falls over during incubation.

A SIMPLIFIED FLASK FOR RELATIVE STABILITY TESTS UPON SEWAGE

J. L. POMEROY, M.D., Fellow A. P. H. A.
and
R. V. STONE
County Health Officer, and Director of Laboratories,
Los Angeles County Health Department, Los Angeles, Calif.

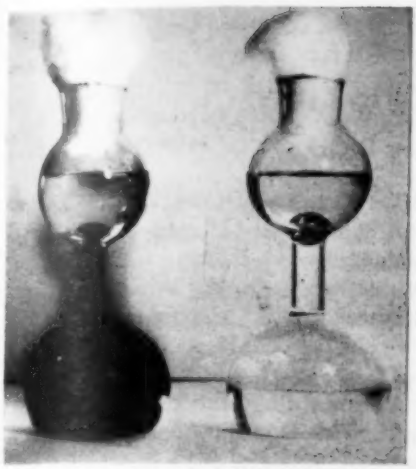
IN 1915 Professor Ivan C. Hall [1] published a description of a new aerobic-anaerobic culture tube. This has become generally known as the "Hall tube." In principle, it is a modified potato tube, having a constriction about one inch above the bottom, this constriction being of a diameter that readily permits the sealing of the lower portion by a marble. Filled with nutrient broth, aerobic organisms propagate in the space above the marble, while anaerobic organisms grow in the space below.

During the development of this tube it was our privilege to be associated with Professor Hall, and we were familiar with tests conducted by him in proving the efficacy of his method. One test that was utilized to detect tubes where the marble seal was faulty was to introduce methylene blue into broth filled tubes and then to autoclave with the purpose of driving out dissolved oxygen in the lower chamber. As a result the methylene blue lost its color. These tubes were then held for a considerable period of time for observation. Where color reappeared in the lower portion, such tubes were discarded as imperfect.

Several years later the writer had occasion to conduct an extensive series of relative stability tests and, since most methods in use involved considerable care in assuring a perfect seal on the sewage samples during the test, it was thought that utilization of the principle of the Hall tube should expedite such testing.

A stock flask was selected, this being the Baird sugar flask as illustrated in this article. The 100 or 200 c.c. Kohlrausch volumetric sugar flask with enlarged mouth can also be used, but this is not so desirable as the Baird flask.

New flasks as received in this laboratory are measured for capacity up to the marble seal, and the amount of methylene blue to be added for this volume is marked with a carborundum pencil into the glass. These are then tested by addi-



BAIRD INCURATING FLASKS

tion of sewage and methylene blue to each, autoclaving and observing for complete decolorization below the marble seal. Any flask which does not maintain its condition of anaerobiasis is discarded, this in actual practice being seldom necessary. Ordinary glass marbles are used for the seal.

In making the test, the sewage sample is poured into the flask, which is held tilted so that the marble rests in the curve, leaving the neck open. Sufficient sewage is used to bring the level about half way up in the upper section. The methylene blue is then added by means of a 2 c.c. graduated serological pipette. The marble is then allowed to roll back into place, effectually sealing the neck. The test is now ready to incubate at 20°C. exactly as in any other method. A cotton plug is used to seal the flask during the test. By introducing a methylene blue dosage in the upper portion after the marble has sealed the neck, a good color control on each test has been established so that the beginning of a partial decolorization in the lower test portion is readily observed.

Kohlrausch 100 c.c. flasks list for $.50 each, while the Baird flask of 200 c.c. capacity lists for $1.00.

NOTE: When using the Kohlrausch flask it is necessary to sterilize the marbles in a separate package, and after adding sewage and methylene blue to the flask, the marble is placed in the neck by means of a Stoddart test tube clamp which can be flamed if absolute septic technic is desired. *These flasks are very satisfactory for growing in broth* 100 or 200 c.c. quantities of anaerobic cultures for preparation of antigens or bacterins.

REFERENCE

1. Hall, Ivan C. A New Aerobic-Anaerobic Culture Tube. University of California *Publication in Pathology*, 2:147, 1915.

VITAL STATISTICS

LOUIS I. DUBLIN, PH. D.

The Cause of Fetal Death—In this study 144 cases were examined, all but 3 of whom came from the Whitechapel district of London. In 39 of these the fetus was macerated; in 99, it was stillborn but not macerated, and in 6 the fetus breathed for a short time.

Of the macerated fetuses, 14, or 35.9 per cent, were proved to be syphilitic by the identification of the *Spironema pallidum* in the tissues. Of the remaining 25, death in 11 cases was due to toxemia of pregnancy which was indicated by maternal albuminuria; 1 death was probably due to maternal morbus cordis; 1 death was possibly due to fetal malformation; in 12 the cause of death was obscure, but in only 1 case were the examinations sufficient to exclude maternal albuminuria.

In 91 of the 99 stillborn non-macerated fetuses the necropsy showed that the fetus had suffered from asphyxia. In 73 cases (approximately 73 per cent of the total cases) asphyxia was the ultimate cause of death. Of the 6 infants who breathed after delivery, there was evidence at necropsy of asphyxia in 4; in 2 there was no such evidence, but intracranial hemorrhages showed that one of the causes of asphyxia, excessive pressure upon the head, had been present. Taking all the cases of non-macerated fetuses together: in 105 cases, death was primarily due to maternal disease in 27, to fetal malformation or disease in 5, and to labor in 73. While spirochetes were found in 14 of the 39 macerated cases, they were found in only one of the 105 cases of non-macerated fetuses. Syphilitic infection was found in slightly more than 1 per cent of the non-macerated, in 35.9 per cent of the macerated fetuses, and in 11.3 per cent of the total 133 cases examined for syphilis.—A. C. Palmer. Child Life Investigations. Great Britain Medical Research Council. *Special Report Series, No. 118,* 1928. 112 p.

Automobile Fatalities in the Urban Industrial Populations of American States, 1927—In 1927, 3 out of every 10 fatal accidents of all kinds in the industrial populations of the United States and Canada, resulted from the operation of motor vehicles. Reports for the first 5 months of 1928 show that this type of accidents is now occurring even more frequently than in 1927. Among Metropolitan industrial policyholders, the death rate for negroes, in 1927 was 17.2 per 100,000, as compared with 19.1 for whites. Comparison with a study of 1923 shows a 32 per cent rise in the automobile death rate among the negroes, as compared with only 16 per cent for the whites.

The death rate for Canada is 10.9 per 100,000 among whites, whereas that of the United States is almost double with 19.1 for whites and 17.2 for colored. But the rate in Canada has increased more rapidly in recent years. In the United States, the mountain states with a rate of 22 for whites, and the South Atlantic states with 22 for whites and 22.7 among colored, show the highest rate of automobile fatalities. The lowest rates appear for the New England states, 15.4 for white and 8.5 for colored, and for the West South Central states with 14.7 for white and 17 for colored.

Despite the immense motor vehicle traffic of the cities of New York State, the death rate 16.8 for whites and 14.9

for negroes, is well below the average for the country, and for the adjacent states of Connecticut, New Jersey and Pennsylvania.—*Stat. Bull.*, Met. Life Ins. Co. 9:6-8 (June), 1928.

Variations in Cancer Death Rates in Relation to Topography and Fuel—This study was based on three theories evolved by C. E. Green as a result of his investigations in the causes of the variations of cancer death rates in France, Scotland and England. These theories are summarized as follows: Open level districts of high or low altitude show lower rates than land in hollows or depressions or intersected by gullies, valleys or lying against adjacent hills. High rates from cancer accompany an excessive presence of SO_2 gas from the use of coal with a high sulphur content. Districts with uneven roof-lines have high cancer rates, because the resulting poor house and chimney ventilation increases the accumulation of SO_2.

Staten Island, in New York City, was chosen as the location for the survey because it presents a varied topography, and large parts of the island have suffered for many years from smoke, fumes and vapors from large industrial plants on the neighboring shores of New Jersey. The study was begun in November, 1920, and covered 515 cancer deaths among residents of at least 3 years for the period between 1914 and 1920. Adjustments for variations in diet and individual or parent nativity did not make any important changes in the rates. But the exposure to smoke fumes and gases from industrial plants or from coal stoves and hot air furnaces seemed to have a direct relation to mortality from cancer.

The rates for the 13 districts varied from 42.1 to 78.9 per 100,000 population. The 5 districts which were particularly exposed to the smoke from industrial plants in New Jersey all had rates above 60. Only 2 districts that were not directly exposed had rates over 60, and these 2 districts, with rates of 69.6 and 76.3, were densely settled, level sections backed by high hills in which about 70 per cent of the population used coal stoves or hot air furnaces both of which methods of heating are likely to permit the escape of combustion products into the home. The 5 districts having the lowest rates, from 42.1 to 48.7 were only occasionally or indirectly exposed to the fumes of the industrial plants and, with but 2 exceptions, were sections in which at least 70 per cent of the homes used steam or hot water furnaces. The 2 exceptions were districts in which the majority of the people used coal stoves in which however a great deal of wood was burned, and the districts were so sparsely settled that there was little accumulation of fuel combustion products.

Variations in topography were somewhat less closely correlated to variations in cancer mortality. The 6 highest rates were found in districts with sloping or level land backed by hills, while the 2 lowest rates were in districts with level land. One section with high but fairly level land had a low rate, one with high sloping and intermediate land had a medium rate, one with comparatively level land had a fairly high rate, while one district which was considered fairly hilly, had a low rate.—Jerome Meyers *New York State J. Med.* 28:365-372 (Apr. 1), 1928.

Heart Disease in the Negro Race—From a study of 257 cases of heart disease admitted to Grady Hospital, Atlanta, Ga., it was observed that 3.7 per cent of all admissions to the general hospital were due to cardiac cases. Of the 257 cases with heart disease, 30 per cent occurred in the fifth decade, and 66.6 per cent occurred in the fourth, fifth and sixth decades. The incidence of

heart disease by decades is about the same in both the male and female groups.

Rheumatic heart disease is much more prevalent in the North than in the South. In the series of 257 cases 29.7 per cent were definitely syphilitic. From 20 to 25 per cent of negroes who contract syphilis sooner or later develop some evidence of cardiovascular syphilis. Among the cases of syphilitic heart disease 55.4 per cent had aortic regurgitant murmurs, and of this number 83.3 per cent were males.

Arteriosclerosis with hypertension or hypertensive heart disease without demonstrable arteriosclerosis, causes 60.1 per cent of all cardiac admissions, attended with high mortality. The disability is longest in the arteriosclerotic group, and it requires the longest hospitalization. The mortality is unusually high (44.8 per cent) because of the state of congestive heart failure in which these patients are received.—Hal M. Davison and J. C. Thoroughman. *South. M. J.*, 21:464-468 (June), 1928.

The After-History of Sanatorium-Treated Patients—The condition of 395 tuberculosis patients in the latter part of 1926 who had been treated in the King George V Sanatorium in the second half of 1922 has been traced. Of 384 cases of pulmonary tuberculosis, 35 per cent were dead, 20 per cent were capable of doing ordinary work, 9 per cent were doing some lighter work, 24 per cent were not able to work, 4 per cent were undergoing further institutional treatment and 7 per cent were untraced. When these were divided into T.B. + (cases in whose sputum the tubercle bacillus has been demonstrated on one or more occasions) and T.B. — (cases in whose sputum the tubercle bacillus has never been demonstrated), the percentages were respectively: 39 and 13 dead, 18 and 30 doing ordinary work, 8 and 16 doing lighter work, 24 and 25 unable to work, 3 and 9 undergoing treatment, and 7 and 8 not found. There were 11 cases in which diagnosis of tuberculosis was not confirmed and of these 9 per cent were dead, 36 per cent were doing ordinary work, 27 per cent were unfit to work and 9 per cent were being treated. These figures compare favorably with sanatorium figures in 1914 and 1915, when 70 per cent of all cases treated in sanatoriums were dead in 4 years.

If these figures be divided into those representing the different periods of life, we see that the results remain remarkably constant. Of the T.B. + cases, the percentage of deaths between ages 16-24 was 42 and between 25-39, 40; and 40 and over, 35. Of the T.B. — cases, 10 per cent of the 16-24 age group were dead, 8 per cent of the 25-39 group and 21 per cent of those over 40. This appears to indicate that age has no very striking influence on the ultimate prognosis.

When the cases are subdivided by the Turban-Gerhardt classification, 16 per cent of those in stage I had died and 41 per cent were working. Of those in stage II, 21 per cent had died and 36 per cent were working and of those in stage III, 56 per cent had died and 16 per cent were working. If they are divided according to progressive degrees of systemic disturbance we find that 22 per cent of those in class A had died, 56 per cent of those in class B and 65 per cent in class C. On the whole the systemic factor is of more use in evaluating prognosis than the local disease extent factor. —C. O. S. Blyth Brook. *Tubercle*, 9:167-171, (Jan.) 1928.

PUBLIC HEALTH ENGINEERING

ARTHUR P. MILLER, C.E.

Pollution of the Mississippi River in the Vicinity of Minneapolis and St. Paul—The basic data collected during a study of the pollution of the upper Mississippi River, between Minneapolis, St. Paul and Winona, Minn., collected during a joint investigation by the U. S. Public Health Service, the States of Minnesota and Wisconsin and the cities of Minneapolis and St. Paul, during the period June, 1926—August, 1927, have been made available, in mimeograph form, for the use of the coöperating agencies, to assist in the solution of the sewage disposal problem existing in that portion of the Mississippi River.

The report contains summarized results, as monthly averages, of the chemical and bacteriological examinations and hydrometric data. Population estimates, estimates of sewered population, population equivalent to industrial wastes and other pertinent data are presented.

The disposal of the sewage of the Twin Cities, by dilution, is complicated by a dam located below Minneapolis, behind which there is a considerable deposition of sewage solids from the city sewage as a result of decreased velocity in the river. The problem of the disposal of the sewage from the remainder of the metropolitan area will be still further complicated by the construction of a second dam in the near future, which will form a second pool immediately below the present one and will decrease the velocity in the river through St. Paul and South St. Paul.

Indications are that the sewage load in the river will increase so that objectionable conditions through the Twin Cities and as far down stream as Hastings will be of frequent occurrence in the future. The formation of the second pool will intensify the present objectionable conditions.

Studies of methods of sewage disposal are being conducted by the Metropolitan Drainage Commission, created by the last legislature and by the Minnesota State Department of Health. It was primarily to make available the basic data relative to conditions existing in the river for the use of these state organizations, that the preliminary report was prepared—H. R. Crohurst. Unpublished report made under supervision of U. S. Public Health Service in coöperation with the States of of Minnesota, Wisconsin and cities of Minneapolis and St. Paul. 86 pp. Abstr. H. R. Crohurst.

Public Works of the Ruhr Sanitary District—The Ruhr River Sanitary District was established by a Prussian law on June 5, 1913. Its sole purpose is to prevent pollution of the Ruhr River and its tributaries. The total population contributing is about 1,300,000. Industrial wastes are contributed by coal mines, iron and steel works, tanneries, textile works, and cellulose and paper works. According to the law, one-third of the cost of carrying on the work of the district is paid by the water works, since they are considered as receiving the greatest benefit.

Most of the construction work has been carried on in the last 4 years during which time total expenditures for the years were as follows: 1923, $472,000; 1924, $710,000; 1925, $1,150,000; 1926, $1,970,000; 1927, estimated, $2,140,000.

The works consist of sewage disposal units, sewerage systems, and pump plants. To date 36 disposal units, 56.5 miles of collecting sewer and 5 pump plants have been built. For 3 towns

located near the mouth of the Ruhr, a collecting sewer 6.8 miles long was constructed which carries this sewage to the main stream, the River Rhein.

In other sections where it was impossible to divert sewage directly to the Rhein, various types of disposal plants have been installed. The methods of treatment used at various places are listed in this article and there are a number of photographic views.

Separate sludge digestion is used in one town of 16,000 and in another of 12,500. A sludge digestion tank in which the sludge is heated is used at one place. The sludge digestion tank was installed as an addition to the original Emscher tank. Heat is obtained by burning the gas from the treatment plant. Chlorination of sewage is used only to a limited extent. An activated sludge plant is used at Essen-Rellinghausen, population 45,000. There are very few treatment plants for handling industrial wastes alone and it has been the general rule to mix the wastes with domestic sewage and treat the mixture.—Karl Imhoff. Pamphlet in German, June, 1927. 8 pp. Abstr. A. L. Dopmeyer.

German Developments in Refuse Disposal—The developments of refuse disposal in Germany since 1893 are set forth briefly in this article. The shaft furnace in which heavy layers of refuse are burned was first developed at Hamburg. Other recent and successful developments are the removal of combustion residues by machinery, and in 1925 the installation of fire tube boilers in combination with the furnace unit. At the Hamburg plant, consisting of 12 furnace units, 4 of which are equipped with fire tube boilers, 1 of these units was replaced with a furnace provided with a grate residue remover and a vertical tube boiler. Tests on this unit indicate that it will handle 80 tons of refuse per 24 hrs. as compared to 30 tons per 24 hrs. for the old units. Further successful developments along this line are an increased grate area, a slack-forming zone of water cooled iron surface covered with stone, the vibrating or oscillating blower, and the air heater. Combustion usually lasts about 20 minutes. The flue gases pass through the ashing chamber where they are burned further, and then successively through a fire tube boiler, a flue chamber with steam superheater, 2 horizontal flue-tube boilers, a second flue chamber, electric filter and chimney. The by-products of the plant are 45 to 50 per cent slack; 1 per cent old iron; 0.7 per cent magnetic slack; 5 to 20 per cent flying ash; 0.55 to 3.3 lbs. steam per lb. of refuse; 353 to 530 cu. ft. of hot water at 122° F. in 1 hr. from 1 furnace unit.—John H. D. Blanke. *Am. City* 38:87 (Feb.), 1928. Abstr. J. B. Harrington.

We Want Pure Air in Our Towns—The author feels that we should make an effort to furnish city dwellers with pure air just as we furnish them with pure water. On March 22, 1926, he says, two members of the French Academy presented the following analysis of material which fell on a gauge placed in the center of Paris:

Carbon	2,659 grs. per sq. meter
Hydro-carbons	1,824 " " " "
Sulphuric acid	2,432 " " " "
Chlorine	0,253 " " " "
Ammonia	0,021 " " " "

A further analysis made at Vitry disclosed 1,592 kilograms of soot to the square meter during the month of February. He ascribes this latter figure to the use of coal rich in ash. The reaction of the distillation by-products of coal with Paris water which has been purified by chlorine is such as to produce an iodoform taste in the water sufficient to render the liquid at times undrinkable, according to the author.

A Draft Law has been brought before the Chamber of Deputies which will per-

mit the authorities to proceed to study this problem and remedy the present state of affairs. Louis Forest. *World's Health*, 9:86 (Mar.), 1928. Abstr. Leonard Greenburg.

Atmospheric Pollution With Arsenical Dust—This study arose because of a complaint that the dust from a power generating station was a nuisance and that it contained arsenic to the extent of 125 p. p. m. Accordingly, samples of dust were taken from the roof, rain water gutters and chimney shaft of the power plant and several factories in the neighborhood. The pulverized coal used at the power plant contained but 3 p. p. m. of arsenic, whereas the samples from the roof of the plant contained from 50 to 175 p. p. m.; from rain water gutters from 100 to 200 p. p. m. ; and from flue dust from 7 to 500 p. p. m. Despite the fact that the pulverized coal apparently contained so little arsenic, it is the author's belief that all of this arsenic originated in the coal being burned. It is pointed out that various types of coal may contain considerably larger amounts of arsenic than found here.

The question arises as to the health hazard brought about by the presence of this amount of arsenic in the furnace dust discharged in the atmosphere. It is conceivable that a workman might inhale more than that amount of arsenic which is specified as being the maximum permitted on imported apples. The requirements for apples at the present time specify that not more than 1/100 of a grain of arsenic per pound of apples is desirable. The author concludes that workmen engaged in cleaning out furnace flues would inhale more than this quantity of dust, but there is no knowledge of any injury from this cause.

In conclusion, the author points out that the Public Health Smoke Abatement Act should tend to lessen atmospheric pollution of this nature.—G. Sowden. *J. State Med.*, 35:668 (Nov.), 1927. Abstr. Leonard Greenburg.

Sludge Thickening and Discharge—In some laboratory tests, it was found that the slow stirring of dilute suspensions of mud in water caused a concentration of sludge in 10 hours that was not equalled in 47 to 75 hrs. of quiescent settling. Tests were made with an experimental Dorr clarifier in which three methods of discharging sludge were tried: (1) discharge through a swivelled pipe which could be readily swung up or down to control the discharge head; (2) combinations of the swivel pipe and different sized orifices; (3) by the use of a diaphragm pump.

The conclusions drawn from the tests were: (1) The clarifier demonstrated its ability to thicken river mud and to discharge the sludge with a water loss of less than 1 per cent; (2) for the handling of this type of sludge, the piping should be free from shoulders or any obstructions; flange joints being recommended; (3) either orifice or swivel discharge may be used, but either will require careful manipulation and fairly close attention; (4) the diaphragm pump handled and controlled the sludge discharge without any difficulty, and could consistently remove sludge of a greater density than could be continuously discharged through an orifice or through the swivel pipe.—A. W. Bull and G. M. Darby. *Water Works*, 67:76 (Feb.), 1928. Abstr. H. B. Hommon.

INDUSTRIAL HYGIENE

EMERY R. HAYHURST, M.D., AND LEONARD GREENBURG, PH. D.

A New Test for Industrial Lead Poisoning. The Presence of Basophilic Red Cells in Lead Poisoning and Lead Absorption—According to this contribution, the action of lead and certain other toxic substances which affect the bone marrow, is to produce an out-pouring of miniature red cells from this tissue. These miniature red cells are thrown out in the circulation in an amount depending on the degree of irritation of the bone marrow. It is possible to distinguish the miniature red cell by its morphological and staining characteristics. Dr. McCord makes use of the fact that the miniature red cells contains basophilic material to provide a test for these cells. Thick blood smears are made on ordinary microscope slides and are dried in the air. Staining (without fixing) is done by means of a dilute, acidulated methylene blue or hypotonic saline methylene blue, or lastly by Manson's methylene blue. After 10 minutes of staining the excess is drained and the slide is washed in distilled water. It is dried and examined under the oil immersion lens without a cover slip. Red cells appear as a light ring of material while the basophilic cells possess granulated blue dots in a cell of reticulated nature.

The clinical studies on both normal (control) and exposed persons disclosed the following facts:

1. Normal persons usually have less than 1000 basophilic cells per cubic millimeter of blood, and always have less than 5000 such cells.

2. The number of basophilic cells is increased in lead, benzol and arsenic poisoning.

3. Frank cases of lead poisoning invariably present basophilic counts in excess of 7,000 cells, the usual range being from 7,000 to 50,000 cells.

4. Very high basophilic counts may be present, as high as 60,000 to 80,000 without any signs of clinical lead poisoning.

5. Lead workers presenting basophilic counts in excess of 6,000 to 7,000, should be accepted in the absence of other causative agents as being poisoning subjects and should be treated accordingly.

The conclusions of this paper are based on a study of more than 1000 persons in various employments; of these 550 were lead workers exposed in varying degrees.

This would appear to be a very fundamental contribution and merits testing and use at the hands of those interested in lead and benzol poisoning.—Carey P. McCord, M.D. U. S. Department of Labor, Bureau of Labor Statistics *Bulletin 460*, Washington, 1928. L. G.

Occupational Mortality Among Males in England and Wales, 1921-1923—A Summary of the Report of the Registrar General—This is an abstract and digest of Part II of the 1921 Decennial Supplement of the *Report of the Registrar General of England and Wales*. It will be recalled that in 1912 the Registrar General published a report of a similar type dealing with occupational mortality during the years 1910, 1911 and 1912. The present report is similar to that of 1912, and is very thoroughly and comprehensively reviewed by Mr. Britten of the Statistical Office of the U. S. Public Health Service.

To one not familiar with this particular report of the Registrar General a hasty review would yield but a limited amount of information. The report is rather complex in nature and we are, therefore, particularly fortunate in having this excellent summary and digest prepared by Mr. Britten. It is impos-

sible to give the results of this digest in a brief abstract. Suffice it to say that the mortality rates are obtained with reference to social distribution, fertility and infant mortality, specific occupational groups with reference to major causes of death, mortality by age from a few of the causes in the larger occupational groups, a complete summary of standardized rates by occupation, and a comparison of these rates with the rates for the years 1910-1912.

The attention of all workers in the field of industrial hygiene and those interested in the vital statistics of occupation is invited to this paper.—Rollo H. Britten, *Pub. Health Rep.*, 43, 25: 1565 (June 22), 1928. L. G.

Cause of **Occupational Dermatitis** in Sydney **Rubber Works in 1927**—Studies in Industrial Hygiene, No. 11—Studies were conducted in two rubber factories manufacturing goods of such a type as to warrant comparison between the two plants. In one of these factories but 1 case of dermatitis had occurred among 250 employes in a period of 1 year. In the second factory during this same time there had been 136 cases of dermatitis among 1,500 employes. In this factory, designated as Factory B, 111 of the 136 cases occurred in shoe making, tire building and in the mill department which supplies stock for the whole factory. A comparison between the working processes and compounds used in the two factories revealed the fact that the excessive amount of dermatitis in this factory was due to the use of the three following substances:

1. The use of a butyraldehyde condensation product of dimethyl-paraphenylene-diamine as an accelerator.

2. The use for an isolated period of hexamethylene-tetramine as an accelerator for certain classes of goods which resulted in an outbreak of fissured palms and fingers in tire builders, due apparently to an unusual liberation of formaldehyde as a decomposition product.

3. The use of benzine for cleansing hands and arms.—

Charles Badham and K. R. Moore, Extract from the *Report of the Director-General of Public Health, New South Wales, for the Year ended 31st December, 1926.* Section I C. L. G.

Respiratory Diseases as a Cause of Disability Among Industrial Workers—This recent study of 10 years' illness and absence records of the Edison Electric Illuminating Company of Boston showed that some 54 per cent of the absences of men on account of sickness were caused by the respiratory group of diseases. A similar type of study made among the members of several industrial sick benefit associations disclosed the fact that some 47 per cent of all illnesses were in this group. From these studies it was found that when all cases of disabling sickness, as well as when only those cases causing a disability of one week or more were considered, the respiratory diseases constituted approximately one-half the total number of cases. It is obvious from this that for its effect on the absence rate, the respiratory diseases are of paramount importance.

A more detailed consideration of the respiratory disease absence rates of the Edison Electric Illuminating Company revealed the astounding fact that common colds account for 71 per cent of all of the respiratory disease cases. These, however, are of rather short duration, for when one considers the respiratory diseases causing disability for 8 consecutive days or longer the common cold practically loses its significance.

The seasonal trend of the respiratory disease follows the usual well known trend in the average community, the peak being in the months of January, February and March.

Some very interesting figures are cited showing the variation in the rate for

respiratory diseases among the employes of different industrial organizations, the rate varying from a maximum of 85 per 1,000 men employed to 17 per 1,000. The importance of this variation is clearly indicated by the author.—Dean K. Brundage, *Pub. Health Rep.*, 43, 11:603 (Mar. 16), 1928. L. G.

Industrial Poisoning Cases Among Watch Dial Painters—The effect of the use of radioactive substances on the health of workers using these materials in the painting of clock and watch dials, has recently been brought to the public attention once again through the lawsuit filed against the United States Radium Corporation of Orange, N. J. According to the present paper 14 girls who have been employed in this plant at various times since 1917 have died as a result of the absorption of radium. In addition, there have been 3 deaths reported among watch dial painters of Waterbury, Conn.

The case against the United States Radium Corporation was settled out of court with an agreement providing that each of the victims is to receive an immediate cash payment of $10,000, an annuity of $600, and an allowance for medical and legal advice. It is reported that one of the original workers with this substance, formerly an official of the United States Radium Corporation and the person who originated the formula for the luminous paint used in the New Jersey plant, is at the present time a victim of radium poisoning.—*Month. Labor Rev.*, 27, 1:42 (July), 1928. L. G.

High Death Rate from Pneumonia Among Iron Foundry Workers—In an analysis covering the 3-year period from 1922 to 1924 inclusive a particularly high death rate from pneumonia is indicated. This study shows that 15.9 per cent of all deaths among iron foundry workers insured by the Metropolitan Life Insurance Company were due to pneumonia, while 7.7 per cent among all occupied males were due to this same disease. The age distribution of the disease showed the same trend, being higher for each age of the chief working periods of life, from 15 to 64 years.

The study further discloses the interesting fact that of 74 occupational classes analyzed 15 had death rates in excess of that for all occupied males. The paper discloses the three distinct types of hazards associated with a high pneumonia rate, namely, dust, extreme heat, and exposure to sudden variations in temperature.

Some of the most signifiicant groups having high pneumonia rates are iron, steel and foundry workers, cordage and hemp mill operatives, polishers on iron and steel products, underground coal miners, etc.—*Stat. Bull.*, Mar., 1928; Metropolitan Life Insurance Company. *Month. Labor Rev.*, 26, 6:51 (June), 1928. L. G.

FOOD, DRUGS AND NUTRITION

WALTER S. FRISBIE

The Blacktongue—**Preventive Action of 16 Foodstuffs**—The production in the dog, by certain diets, of a pathological condition regarded as identical with blacktongue, and its correction by an element present in yeast, appears in work previously reported from this laboratory (*Pub. Health Rep.* 41:297; 43:172 & 657; 40:54). The resemblance of this disease to pellagra in man and the fact that it is corrected by an element in yeast which is known also to contain the pellagra preventive (factor P-P) suggests the probability that these diseases are fundamentally identical. The blacktongue preventive action in the 16 foodstuffs here recorded was undertaken in view of the application of the information to the treatment of pellagra. Both curative and preventive procedures were used on the experimental dogs.

Details are given as to the duration of all feeding experiments, clinical symptoms and composition of the various diets with the following conclusion: Eleven foodstuffs—maize, wheat germ, cowpea, soy bean, milk, butter, cod liver oil, tomatoes, carrots and rutabaga—have been studied for preventive action, both in blacktongue and pellagra. In 8 of these—maize, wheat germ, cowpea, milk, butter, cod liver oil, lean beef, and tomatoes—the preventive potency for pellagra is similar to that for blacktongue. With the remaining 3—rutabago, carrots, and soy bean—the pellagra preventive action is not sufficient to permit comparison. It appears that so far as study has been made, all foodstuffs which are sources of blacktongue preventive are also dependable as pellagra preventive. Those which are deficient in properties which correct the former disease are also poor sources for the prevention of pellagra. Of the remaining foodstuffs studied, whole wheat was found to contain the blacktongue preventive, but in small amounts. Cottonseed oil contains little if any blacktongue preventive. Pork liver and egg yolk contain blacktongue preventive, but their value in pellagra has not been studied. Canned salmon contains the blacktongue preventive. A study of its effect on pellagra is in progress. On the basis of experiments here recorded on dogs, it is recommended that liver, salmon and egg yolk be used for treatment and prevention of pellagra in human beings.—Joseph Goldberger, G. A. Wheeler, R. D. Lillie and L. M. Rogers, *Pub. Health Rep.* 43:1385 (June 8), 1928.

The Rôle of Aluminum Compounds in Animal and Plant Physiology—Previous investigators have reported widely varying contents of aluminum in animal and plant material. The fact that the early investigators reported the greatest amounts of aluminum in the same material has led to the belief that the refinement in analytical methods has resulted in considerable revision of our knowledge on this subject, and has raised the question if even recent figures are not higher than is actually the case. The wide distribution of aluminum in nature makes difficult the preparation of analytical reagents free enough from this element to be useful in biological assays. The authors have, therefore, had recourse to spectrographic methods of determining aluminum. The work was undertaken because of the widely divergent views of investigators at the present

time as to the effect of aluminum upon health, since these opinions vary—from those who regard it as a toxic element to those who regard it as a biological essential.

Spectrograms are shown of the various ash material studied. The authors found that various plant products; cereals, potatoes, carrots, and cottonseed meal; and animal products; hens' eggs and various organs of the rat, gave spectrograms in which no aluminum line was present, indicating less than 0.5 p. p. m. aluminum. The exceptions were rat skins, intestinal walls and lungs, which gave spectrograms indicating the presence of about 0.5 p. p. m. aluminum. The explanation is that these organs are absorbed.

exposed to air, dust and dirt, which are

Young rats, raised to maturity, on diets containing aluminum compounds compared in every respect to control rats under similar conditions but with the aluminum eliminated from the diet. Two experiments were undertaken—one in which the diet contained 0.6 per cent of aluminum chloride and in the other 3 per cent of a commercial brand of a sodium aluminum sulfate, calcium acid phosphate baking powder which had been decomposed by water and heat previous to feeding. The aluminum chloride and baking powder diets represented respectively 0.067 and 0.063 per cent of metallic aluminum. The growth curves and photographs of controls and tests show that rats receiving in the diet 600 p. p. m. of metallic aluminum in either form were the same in growth, reproduction, and general appearance as the control rats. A number of the young rats of both test groups were examined chemically after ashing the entire bodies of the baby rats and in the case of the older rats by ashing the individual organs. The ashes of the bodies of the baby rats and all of the individual organs, except the skin, lungs and intestinal walls gave spectrograms indicating not more than 0.5 p. p. m. of aluminum in the various tissues. The skin, lungs and intestinal walls contained slightly more than 1 p. p. m.

To determine the degree of absorption by the intestines, rats were placed on control diet, and on the two aluminum diets, and spectrograms made of the intestines after thoroughly washing the tracts in distilled water. All spectrograms showed aluminum less than 1 p. p. m.; but neither of the methods showed more than in those on the aluminum-free diet indicating that the intestinal tract does not absorb or combine with the aluminum in the diet. The livers, kidneys, spleens, ovaries and testes of rats which had subsisted on test diet for 8 months were found to contain less than 0.5 p. p. m. of aluminum. The excreta of the rats, both control and on the diet, were examined for aluminum, resulting in all cases in an increased content of this element, further suggesting that the aluminum in the diet is excreted without passing through the walls of the alimentary tract.

This investigation indicates that while aluminum is not toxic, neither is it a biological essential so far as the rat is concerned. The results of this experiment confirm the findings of the Remsen Board of Consulting Scientific Experts which reported on a study on human subjects of the effects of diets containing biscuits baked with the sodium aluminum sulfate type of baking powder. It is proposed to continue this study with such biological, rare elements as manganese, zinc, boron and arsenic.—E. V. McCollum, O. S. Rask, and J. Ernestine Becker, *J. Biol. Chem.* 77:753 (May), 1928.

Iron Content of Plant and Animal Foods—The authors previously reported (*J. Biol. Chem.* 74:433) the iron content of certain tissues. In this paper are

reported the percentages of iron in about 150 samples of common food materials, fruits, vegetables, poultry and fish. Tables are given showing the iron content for each food product studied, ranging from 0.00015 per cent for lemon juice to 0.0192 per cent for parsley. This figure for parsley greatly exceeds any reported for spinach, a vegetable noted for its high iron content. Dried legumes were found to contain the highest percentage of iron, followed by green leafy vegetables, dried fruits, nuts, cereals, poultry, green legumes, roots and tubers, non-leafy vegetables, fish, and fruits. It was found that vegetables such as cabbage, celery and head lettuce, containing little chlorophyll, are low in iron. The soil and climatic conditions largely determine the iron content of plants, as is evidenced by the great variation in iron content of different samples of the same material. Salt water fish contain more iron than fresh water fish, and fish with dark colored tissues contain more iron than the light colored. Likewise, the dark meat of poultry is higher in iron than white meat. A comparison is given between the figures found in this experiment and those reported by Sherman (*Chemistry of Food and Nutrition* (3rd. ed.), 1926), which emphasizes the need of more analytical data on the mineral content of foods.—W. H. Peterson and C. A. Elvehjem, *J. Biol. Chem.* 78:215 (June), 1928.

Sanitary Quality of Some Commercial Milk Powders—One hundred samples of commercial milk powders obtained from groceries, bakeries and similar places in Baltimore, representative of the city supply, were studied both bacteriologically and chemically. The bacteriological examination included plate counts, Breed counts, the determination of *B. coli* and search for the presence of the organism of tuberculosis. Both plate counts and Breed counts varied enormously, and the average respective counts from this source show a minimum of 1,000 to a maximum of 3,140,000 for the plate count and a minimum of 2,100,000 and a maximum of 37,000,000 for the Breed count. In no single case were viable tubercle bacilli found by guinea pig inoculation, and the *B. coli* count was in general around 5, with an extreme variation of 500. The chemical data included the total nitrogen and the per cent of this as ammoniacal and as amino acid nitrogen. A comparison between the Breed count and the nitrogen figures indicates an increasing amount of bacteria as the ammoniacal nitrogen increases. The amino acid nitrogen shows no constant relationship to the bacteria. The conclusions are drawn that the milk supply from which these powders were made was excessively high in bacteria and that proper sanitation does not obtain in the milk plant or in trade channels. From this work the authors are led to make the following statement: "Therefore, the finished product under the present conditions of manufacture and handling cannot claim to be the equivalent of the milk supply even when poorly controlled from the sanitary standpoint."—J. H. Shrader, C. L. Ewing, F. A. Korff and Lillian W. Conn. *Am. J. Hyg.*, 8:386 (May), 1928.

CHILD HYGIENE

MERRILL E. CHAMPION, M.D.

Improving the Practice of Obstetrics—Dr. J. R. McCord, of Atlanta, has some definite ideas with regard to needed improvements in the practice of obstetrics. He insists that good obstetrics can be done in the home and is being done there without mortality and with a low morbidity, but he feels sure that obstetrics, being a science, calls for long and intensive training on the part of those who are to practice it. When individuals insufficiently trained attempt midwifery, lives are going to be needlessly lost and much unnecessary suffering caused.

To McCord there are two necessities for an obstetrician. One is a full knowledge of the mechanism of labor and the other is a bountiful store of patience. Soap and water, he says, together with a safety razor and a pair of rubber gloves, complete an ample equipment.

The general surgeon, in the opinion of the author, rarely has the accurate knowledge of the mechanism of labor that he should have, and consequently, "results in hospitals, if statistics are to be believed, are quite as deplorable as those in the home." The important point is not whether the patient is in a hospital, but who is attending her. He thinks that the ulterior motive behind painless labors is too often shorter labor for the physician. Lastly, he feels that "an outdoor obstetric service, at best but poorly supervised, is the wrong way to give men their practical experience in obstetrics."—What is Needed to Improve the Practice of Obstetrics, Dr. J. R. McCord, *J. A. M. A.*, July 21, 1928, pp. 201.

Home Care of the Mouth—In the *Journal of the American Dental Association* is found a bulletin which is one of a series on teeth and their care prepared for the information of the public. It is compiled by the American Academy of Periodontology. It sets forth that the intent of "home care of the mouth is to aid in protecting the teeth from dental decay; to preserve and promote the health of the tissues which support the teeth in the jaws; and to provide a clean environment for the masticating machine and also for the food which is prepared for digestion in the oral cavity."

This bulletin goes on to discuss various phases of hygiene of the mouth. It points out that a good set of natural teeth is of little use unless the supporting tissues are healthy. It advocates massage of the gums by the correct use of the tooth brush. It points out that faulty diet is a serious factor in diseases affecting the teeth and gums and recommends the usual modern well-balanced ration.

To accomplish results, all that is necessary according to this bulletin is (1) two small toothbrushes with two rows of tufts set fairly wide apart; (2) dental floss or tape of medium width; (3) dentifrices which, however, should not be relied upon to take the place of the proper use of the toothbrush; (4) mouth washes, which are not indispensable (A good one may be made by dissolving a level teaspoonful of salt in a glass of water); (5) a wall mirror for use in guiding the various steps in toothbrushing and taping; the mirror is also necessary to check up on results; (6) a clock to check up on time spent on the care of the mouth. A time allowance of not less than nine minutes a day is suggested for brushing and taping. Smokers and those who overeat should take longer. Extra

time should be taken for massage of the supporting tissues of the teeth. Where brushing is not feasible, as is often the case with office workers at lunch, the mouth should be rinsed thoroughly with water.

Various other good advice is offered in this bulletin concerning methods or technic.—The Home Care of the Mouth, *J. Am. Dental Assn.*, July, 1928.

The Danger of Serum Reaction—The fear is frequently expressed that injections of antitoxin and toxin-antitoxin may pave the way for unfortunate serum reactions if subsequent immunological procedures are undertaken. Dr. Sophie Spicer, in the *Journal of the American Medical Association*, gives the results of a study made on a series of 237 patients suffering from diphtheria and scarlet fever who received antitoxin at the Willard Parker Hospital in New York.

Care was used to study the histories thoroughly and information was obtained from parents of the patients concerning previous experiences with immunizing agents.

The conclusion to which Dr. Spicer comes is: "Previous administration of toxin-antitoxin appears to have little or no effect on subsequent serum treatment."

It should be said that one reason for the comparatively mild type of serum reaction which the author observed in her series was the giving of the antitoxin in small divided doses to patients who on test reacted for horse serum sensitivity.

It would seem that Dr. Spicer is right in her conclusion that clinicians as a whole have been overconcerned with the possible untoward results likely to follow if serum is administered subsequent to previous doses of antitoxin and toxin-antitoxin.—The Effect of Previous Administrations of Antitoxin and Toxin-antitoxin on Serum Reaction, Sophie Spicer, M.D., Dr.P.H., *J. A. M. A.*, June 2, 1928, pp. 1778.

The Chief Causes of Deafness—"Almost half of a typical group of nearly 4,700 children of 12 years or over in certain representative schools for the deaf were reported as born deaf, and four-fifths were deaf before their 5th year, according to the National Research Council's report of its survey of schools for the deaf. Meningitis, scarlet fever, measles, falls and blows, and whooping cough are given as the chief causes of deafness which is not congenital."—*World's Children*, Children's Bureau, U. S. Dept. of Labor, July 3, 1928.

Speech Defects—Quoting from *Physical Education and School Hygiene Circular No. 12:*

Binet testing of children with speech defects in the St. Paul schools indicates that such children are neither duller nor brighter than other children. The median I.Q. for 402 children was 97.7—just average.

The percentage of children with each type of speech defect differs with the age groups. Letter substitution is found mainly in first and second grades. The percentage drops steadily until the junior-high-school age, when the defect is rarely found. Stuttering and stammering, on the other hand, are defects acquired, rather than lost, during the school career. It is practically the only defect at high school age.

There are about 400 pupils enrolled in the speech correction classes in a school population of about 40,000.—

Physical Education and School Hygiene Circular No. 12, U. S. Dept. of the Interior, May 7, 1928.

PUBLIC HEALTH NURSING

MIRIAM AMES, R. N.

The Heart Disease of Childhood—Syphilis and senile degeneration are responsible for a large part of the heart disease appearing in adult cardiac clinics. Syphilitic heart disease is preventable if as soon as the disease is contracted treatment is instituted and continued.

The third largest group of patients have rheumatic heart disease. The last is essentially different from the first two forms, as the disease occurs almost exclusively in the first half of life. Because this is true, a very definite challenge to prevent rheumatic fever or its after-effects is offered to those interested in the care and well-being of children.

Until the exact nature of rheumatic fever is determined, at some future time, it would seem the safer plan to treat as one and the same condition the well-defined, clear-cut cases of rheumatic fever and the child who has growing pains, who is in poor health with recurring colds and sore throats, and who may or may not have signs of cardiac involvement.

The proper treatment and management of such children may do much to prevent the occurrence of rheumatic heart disease.

Every safeguard possible should be taken to lessen the strain on the heart of any child recovering from rheumatic fever or from any acute infectious disease. Children should not be allowed out of bed too early. The following points may make it easier to determine when the child may be permitted increased activities:

1. Normal body temperature for a week, not varying more than 1.5° F.
2. Maximum basal rate not more than 100 a minute
3. Return of pulse rate to previous resting basal rate within 3 minutes after exercise
4. Progressive gain in body weight
5. Absence of signs of fatigue, such as
   a. Lack of appetite
   b. Irritability in the late afternoon
   c. Delayed or restless sleep
6. Normal white blood cell count
7. Normal red blood cell count
8. Normal systolic blood pressure
9. Pulse pressure of 50 mm. or less
10. Heart size, stationary or decreasing
11. Normal cardiac mechanism
12. Absence of signs of heart failure
13. Normal respiratory vital capacity
14. Absence of skin eruptions
15. Absence of rheumatic nodules
16. Quiescence in infections of nose, throat or other foci
17. Period of normality for two weeks after withdrawal of salicylates.—

Rheumatic Heart Disease, by Hugh McCulloch, M.D., *J. A. M. A.*, 90, 26:2073 (June 30), 1928.

Deafness in Children—The infectious diseases are condemned as being responsible for many cases of acquired deafness. Records show that the most dangerous period of the development of deafness in children is before the 3rd year, that age when children are so apt to contract the familiar diseases of childhood.

In a group of over 1,000 deaf children, meningitis, scarlet fever, measles, influenza, infantile paralysis, and suppurative otitis media, were responsible for about 40 per cent of the cases. Infections of tonsils and adenoids, a factor in producing a mild deafness in children, are not regarded as being responsible for the production of deafness. Where deaf children have had tonsillectomies, the charitable view to take is that these were done not because of the deafness but because of the unhealthy condition of the adenoids and tonsils.

If the incidence of the infectious diseases is decreased, deafness in children

will be diminished to an appreciable extent with the accompanying economic and social gains. B. J. B.—Deafness in Children. *J. A. M. A.*, 90, 26:2104 (June 30), 1928.

New Things in Medicine—Is there "nothing new under the sun"? The old, familiar quotation answers us in the negative. Yet the year 1927 brought about some notable discoveries in medicine. Among these are the successful treatment of paresis by inoculating the patient with malaria. The fever thereby induced can destroy the paresis germ, and the malaria may then be cured by quinine. An apparently crystalline form of insulin was produced. The drug "myrtillin" was announced to be a treatment of diabetes. An antitoxin to cure erysipelas was developed.

Pernicious anemia is no longer the hopeless disease it was once, since the effectiveness of the Minot and Murphy liver diet has been demonstrated.

A diet for treating epileptic children has been found.

Another weapon against rickets in babies was discovered in the use of dried milk treated with ultra-violet light.

The good work is still going on. What will 1928 bring forth?—New Things in Medicine, *Ohio Health News*, 6, 13:4 (July 1), 1928. B. J. B.

What Next?—The death rate of women in childbirth can be lowered; the death rate of infants can be reduced. That the Sheppard-Towner Act has brought about these results is the conclusion drawn by the American Child Health Association and the Maternity Center Association from a study made by them at the request of the League of Women Voters to evaluate the accomplishments made under the Maternity and Infancy Act.

The maternal death rate for the country *as a whole* has not changed appreciably in 1926 from that in 1922 when the act was inaugurated. However, during that period, the maternal death rates in the country districts have diminished; those in the city have increased. As most of the Sheppard-Towner money has been spent in rural districts, it is but fair to assume that it is in some measure responsible for the reduction.

Among the direct results of the bill may be numbered the formation of child hygiene bureaus in many states which previously had none, the establishment of permanent health centers, and the distribution of literature. Work is varied according to the needs of the state; for example, in Minnesota the Indians have received a much needed service from trained Indian nurses; child health conferences were conducted by physicians for Indian children. In Pennsylvania where large numbers of foreign born women demand delivery service by women rather than men, instruction has been given to midwives.

Such widespread activities must arouse interest in what is being done and what remains to be done. If the Sheppard-Towner Act has done nothing else, it has increased interest in maternal and in infant welfare.

The work is not completed. Many communities yet need to be shown by demonstration the reasonable standard of care for mothers and their babies. The effective methods of education must be made available through more and still more health centers and through conferences. The Sheppard-Towner funds will no longer be available after June 30, 1929.

What will then be the country's response so that the thousands of mothers yet unreached may receive the instruction and help they need?—The States Account for Their Stewardship, *Child Health Bull.*, 4, 3 (May), 1928.

Independence Assurance—Every professional self-supporting woman likes to feel that she will be able to continue to support herself regardless of advancing years. Life insurance can make this independence possible.

In considering the best form of life insurance for them, nurses may be divided into three groups: the nurse who does not have to support herself entirely, the one who supports herself and contributes to the support of others, and the nurse who has only herself to consider.

In the first case, the necessity of life insurance as a means of independence assurance is, obviously, slight.

In the second case, the nurse needs to consider the loss of income to her dependents through her death or loss of earning capacity. For her, many plans are possible, depending on the purpose to be served. If the largest amount of insurance at the minimum expense is desired, ordinary life insurance best fills the need. This guarantees an estate at the time of death, larger than any other contract carrying the same premium deposits. It is possible by the payment of slight additional premiums to have double indemnity if the insured is killed by accident. Likewise, an increased premium may pay for financial assistance if total or permanent disability should occur. Certain other desirable features are obtainable.

In those cases where the beneficiaries are only partly dependent for support on the one insured, the nurse might find it more advantageous to assume that form of contract which gives herself more return, such as a long-term endowment policy or one affording life income payments.

The nurse having only herself to look out for may find a series of endowment policies maturing at different times an exceedingly satisfactory way of insuring independence in her later years, as well as providing funds for travel or other purposes. A retirement annuity, designed particularly for professional people, guarantees the payment of a monthly income when a certain age is reached.

It is only possible to indicate some of the ways in which a nurse may anticipate her future needs. Any representative of the insurance world would be ready to find the form of insurance best adapted to the personal needs of every nurse.—Charles J. Fay, Insurance for Nurses, *Am. J. Nurse*, 28, 6:579 (June), 1928.

Each Kind Necessary—"There are three kinds of public health work," said Sir Arthur Newsholme. "There is *first*, the old-fashioned public health work, for a large part of which we are immensely indebted to the engineering profession: the getting of a pure water supply, of adequate sewage and drainage, and the protection of food supplies. The stage of building up the sanitary regulations, generally defining such work has been gone through with. And these regulations need to be continued as much as ever.

"There is, *second*, the kind of public health work which views it with utmost importance that the consequences of physical defects be forestalled by their prevention and eradication in infancy and in early childhood.

"And, *lastly*, there is the form of public health work which recognizes it as a public duty that health protection and medical treatment be provided when persons needing such protection and treatment, or their families, are otherwise unable to secure it."—Sir Arthur Newsholme Revisits the New York Health Demonstrations, *Quarterly Bull.* Milbank Memorial Fund, VI, 3:54 (July), 1928.

EDUCATION AND PUBLICITY

EVART G. ROUTZAHN*

Wanted **Before October, 1928**—Outlines for the year's program of health organizations—local, state, national—public department or private agency—or outlines of specialized programs, such as, the inauguration of a new piece of work, diphtheria immunization, attendance at a clinic, vacation precautions, etc. Selections from the outlines submitted will be mimeographed and used in the discussion of "Steps in Preparing a Program of Health Education and Publicity," at Chicago in October.

The outlines should answer these questions:

1 Why will you undertake what you are planning? What facts, circumstances, or desires lead to the choice of activities?

2 What results are sought? What are the objectives or the responses hoped for?

3 To whom will you address the messages? What groups or kinds of people will you try to reach as being most important in getting the results wanted?

4 What is to be the message—the chief talking points—in each special activity?

5 How will you approach the selected groups or kinds of people? What do you believe to be their attitude toward the subject, and their understanding or lack of understanding of the subject? What motives, such as fear, the desire for good looks, civic pride, etc., will be appealed to in seeking action?

6 What are to be the methods and materials used in handling the several situations? List what you will do and what forms of publicity you will use. (A set of samples for display would be welcome.)

In addition to the above please list the routine activities, such as, day by day news which does not relate definitely to the program of effort for the year, the bulletin or house organ, giving out printed matter or information on request, etc.

7 Supplementing the above it will be useful to make up a calendar showing what is to be done month by month in both the preparation and carrying out of the publicity activities.

Recently several health and other social agencies have laid out their year's work according to the above outline. The results have been fairly startling. *We believe that you can do nothing more helpful in preparing for 1928-1929* than to make such an analysis of the plans for the year ahead. If you cannot prepare a full statement, go as far as possible. Please send your outlines as early as possible to Mrs. Mary Swain Routzahn, 130 East 22nd Street, New York, N. Y. Will you drop a line stating that you are on the job?

Education and Publicity Headquarters at Chicago—The space allotted is bigger and better than we have ever had at the A.P.H.A. There will be room for consultation and conference, and the displays will have enough space so that they can be seen.

Division One: Ideas, methods and illustrative specimens—what to do and how to do it—ideas in the rough and ideas worked out in detail.

Division Two: Specimens of leaflets, folders, pamphlets, placards, posters, etc., etc. issued in 1927-1928 and choice specimens issued at any date.

The classification of the displays will be most satisfactory if the material is mounted, as noted below, except items that are too large or too heavy.

Heavy Kraft (brown wrapping) paper will be good for the purpose. Use one side of sheets cut not larger than 11 by 14 inches (11 being the width). Try to leave blank about 2 inches at the

* Please address questions, samples of printed matter, criticism of anything which appears herein, etc., to Evart G. Routzahn, 130 East 22d St., New York, N. Y.

left. If you get the sheets punched for binding have 3 holes, standard distance, at the left.

Every subject or method of use should be on a different sheet so that both the mounted and unmounted material may be classified after it reaches Chicago. Examples: Diphtheria, Colds, etc., etc., Annual Reports, Postal Cards, For Teachers, Mimeograph Work, Programs of Meetings, etc., etc.

If the name of the city and of the organization does not appear plainly on the material, please write, print or paste it at the top of every sheet. Explanation or comment, uses, number used, costs, etc., may be added where convenient by pasting a slip on the sheet.

All the items used in a campaign (newspaper, money raising, legislative, clinic attendance, etc.) may be grouped on several sheets with name of campaign at the top, or may be mounted in a binder.

In some cases, groups of closely related items could be mounted on cards not larger than 22 by 28 inches (22 being the width).

The headquarters display will also include helps in producing publicity material and information for those preparing publicity, which will be classified under such headings as: Paper, Printing, Statistics, Contests, Office, Exhibit Devices, etc., etc.

Items especially desired: the posters of the year; picture diagrams; organization charts; newspaper cartoons; photographs used in newspapers or printed matter; good newspaper stories; campaign outlines and handbooks; photographs or descriptions of stunts or features or window displays; examples of linoleum block illustrations, blue print process posters, soap sculpture; ideas, devices or materials which may be used in preparing exhibits or other publicity matter. Arrangements can be made to show film slides and other projection material.

Send shipments *prepaid* to reach Chicago by Friday, October 12, and addressed to Evart G. Routzahn, Hotel Stevens, Chicago, Ill. Advance correspondence should be addressed to the above at 130 East 22d St., New York, N. Y. Material will be returned only if so requested in writing.

Join—or Get Them to Join—Before Chicago—The one professional organization for those doing any phase of public health education work or supervising such work is the Public Health Education Section of the A. P. H. A. The investment of the $5 membership fee will mean far more to the health worker than to the A. P. H. A. which receives it. Why not canvass your staff for any who are at all concerned with any phase of education and publicity and invite them to join? Why not write to the health agencies in your city and state? The A. P. H. A. will gladly supply application blanks, but your letters need not wait for these. Write your first letters and if any do not respond, follow up with the blanks.

We All Take Part at Chicago—Luncheon sessions will be enriched by the ideas and experiences of many workers from all sections of the United States and Canada. Under "High Spots in 1927-1928," we hope to have time enough for quick reports of all the new ideas and successful methods, with mention of bright news stories, etc. We expect "Ray" and "Al" to demonstrate a duet on social hygiene before Kiwanis, and possibly others will have displays. What have you to offer? If, sadly enough, you cannot be at Chicago, please send samples or descriptions to be presented for you. In response to requests, one luncheon will show "Why Some of the Exhibits at the Convention

Are Good"—and possibly why some are not so good. What is new in "Diphtheria Campaigning" will follow up the Cincinnati session, when the audience was much too big for the meeting room. The "Program for Health Education Training in Teachers' Colleges" will be of significance to our educator members.

Getting **Together at Chicago**—The "live wires" in public health education and publicity will be largely represented at Chicago in October. The mere coming together of the supervisors and practitioners of successful publicity, even if there were no formal meetings, would make the trip well worth while. Ideas, experiences, questions as to how you did it, brief cases overflowing with samples, stimulating personalities—all will await your arrival at Chicago. And the Dinner-Business session of the Public Health Education Section, Tuesday night, will be the grand get together opportunity of the year.

What **About the Audience?**—We have seen the speaker whose face and manner made clear that he was almost unconscious of his audience as a group of people, and heard the speaker who reveals his ignorance of what the members of his audience know or feel about the subject. According to Bertram G. Nelson, University of Chicago, what you say depends on your estimate of the audience. Prof. Nelson, speaking of dental talks, says:

> Bring them vividly before your mind. Ask yourself such questions as these: 1. Are they boys? Girls? A mixed group? 2. How old are they? 3. Have they any interest in teeth now? 4. Would a girl's interest in her teeth have the same basis as a boy's? 5. Have they had experience with dentists? 6. Do they like dentists? 7. What home training have they had in caring for their teeth? 8. Has the school taught them anything about their teeth? 9. How much can they receive in ten minutes? 10. What obstacles must be overcome? 11. Have they any prejudices that I need to overcome? 12. Has any other dentist been there before me? If so, did he make a good or bad impression? 13. What are the fundamental facts that have a practical application for them?
>
> Try talking about his teeth to the next high school boy that you meet. Don't begin by giving him good advice but question him. Find out at first-hand what boys of his age think about their teeth, and what care they give them. You will think this step is unnecessary and will try to remember what you thought and did at that age. Don't fool yourself. Talk directly to the present high school boy. Don't judge him by your own son or daughter. Your children were brought up in a home where toothbrushes were a religion. Talk to your boy's pal. Talk with several boys. After you have interviewed five or six boys and girls, notice how definite your image of that high school assembly has become. Already you begin to feel somewhat at home with it.

Do You "disseminate knowledge"?—"Briefly, the control of cancer depends mostly upon the dissemination of knowledge that will lead to its early recognition by the patient and the physician."—*Health*, New Hampshire State Board of Health. Are we disseminating knowledge, or handing out printed matter? There is often a difference.

To Prime the Pump—In the search for a title for a pamphlet the publicity worker of a national organization looked over a variety of folders and booklets. Then he wrote: "I found several suggestions which may prime the pump." The frequent collections of titles and other groups of material are given in this department largely to stir the imagination of alert workers—to stimulate thinking—to "prime the pump." Additions to these lists are always welcome.

ADDRESSES AND PRICES

To save space we do not give addresses or prices of periodicals with every reference. Usually this information will be given somewhere in the issue, except in the case of the most widely known publications. If not, it will be found in this department in a recent issue.

COÖPERATING GROUPS

Not long ago a high school wrote to the American Junior Red Cross: "Don't give us something to read; give us something to do." And it is "something to do" that will win for public health the active coöperation of millions of helpers —children, young people, grown-ups. *What do we offer them to do?* The editor of this department offers a very special prize for the "best" list of services asked of non-health groups which is submitted before the Annual Meeting in Chicago.

If Rotary, or any club or school group you wish to interest gets out an illustrated year book, tell them of Warren's Year Book Portfolio with its very practical suggestions for business manager and editor. It is good also because of its layout suggestions, for any group which issues an annual report or other publication containing many pictures of clubs or other groups. S. D. Warren Co., 101 Milk St., Boston. *Free.*

Fifteen luncheon clubs will be addressed by representatives of the American Dental Association during the August meeting in Minneapolis, Minn.

"Women's Clubs and State Health Program" is a news release of Illinois Department of Public Health. Tells of help given by various coöperating groups.

HOUSE ORGANS

Child Health Bulletin, American Child Health Association, gives two interesting forms of diagram to show when babies die, and the main causes of their death.

The Commonhealth, Massachusetts Department of Public Health, describes the "teacher's own health score card," prepared by a committee of the Massachusetts Teachers' Federation.

Health, New Haven Department of Health, gave a page for the New Haven Library to tell about the "readable books for the laymen" that are available.

The Health Bulletin, North Carolina State Board of Health, is quoting liberally from current newspapers and other periodicals, sometimes with snappy localized comment.

The Health Messenger, is a 16-page monthly now issued by the Public Health League of Washington, 907 Medical and Dental Bldg., Seattle, Wash.

Social Hygiene News, American Social Hygiene Association, outlined the work of the Division of Public Information and Division of Educational Measures in its March 30 issue.

A dainty valentine design on the cover page of the last February number of *Better Health,* Department of Health, Syracuse, N. Y., enclosed these words: "Mother Dear—If you love me as you say you do, please have a health examination every year and see to it that I have one also. Don't let Dad forget his examination either. Your Valentine."

Two new periodicals are announced in a recent issue of one of the especially helpful magazines for health workers, but no addresses are given!

"Popular Health Education in the Orient," by Dr. F. Humbert. *Worlds Health,* Dec., 1927. Brief reviews with illustrations. "The fundamental principles of popular health education being one and the same, variations of local details are of no more importance than the color of the clothing or skins of natives."

Health Bulletins for the people—We have received several bulletins from an eastern city which are illustrated by an exuberant cartoonist and written by a deadly serious health officer. If they could meet half way—or still better, get together on the premises of the artist, the everyday people for whom they are intended would learn more.

LAW AND LEGISLATION

JAMES A. TOBEY, LL. B., DR. P. H.

WITH Congress in adjournment, the Supreme Court in recess, and the executive branches of the Government subject to the somewhat enervating summer climate of Washington, there has been a vacuity of items on public health law from the national capital. Not so in the states, however, as the following items from Indiana, Massachusetts, Georgia, Missouri, Wisconsin, New York and Virginia will show.

A City Pays for Stream Pollution—It has cost the City of Frankfort, Ind., damages amounting to $3,962.07 for polluting a stream with sewage and thus causing injury to an individual property owner. A decision upholding such an award by a lower court was handed down by the Appellate Court of Indiana on June 19, 1928, according to the *Monthly Bulletin* of the Indiana State Board of Health. In this case, City of Frankfort v. Slipher,—Ind.—the city attempted to show that since it was authorized by statute to build and maintain sewers, it could also lawfully discharge its sewage without purification into a stream which is the natural outlet, and that there could be no liability from such action. The court, in an able opinion, declared:

> The rule of necessity thus declared must in and of itself inevitably force just the opposite doctrine, in the interest of the public health, the very thing supposed to be subserved by the rule, when it is daily becoming more and more apparent that the sewage in the streams is a real menace to the public health, and it is not a necessity, because it can be otherwise provided for, with practicability and assured safety to the public health.

A violation of the Federal Oil Pollution Act by a steamship captain on the Taunton River near Fall River drew a fine of $500 imposed on June 1, 1928, by a United States District Court in Massachusetts, according to an article by Dr. George W. Field in *Our Dumb Animals* for July, 1928. Dr. Field writes that the judge in this case "rendered a distinctly notable service to humanity and to the world in general."

Another Milk Ordinance Upheld—The Supreme Court of Georgia is the latest of the state courts of last resort to sustain a city ordinance for the sanitary control of milk. On May 5, 1927, this court, in the case of Leontas v. City of Savannah, 138 S. E. 154, construed the milk ordinance of that municipality, but did not actually pass upon its constitutionality. On April 16, 1928, this same court handed down an opinion in the case of Leontas v. Walker, 142 S. E. 891, in which the constitutionality of the ordinance was upheld.

The facts in this case are rather unusual. Leontas, a dairyman, was indicted for involuntary manslaughter because of the death of a person who drank chocolate milk containing condemned milk from the Leontas dairy. The indictment alleged that Leontas was engaged in an unlawful act, violation of the city milk ordinance, when the death occurred. Leontas was thereupon bonded to appear for trial, but went to Europe. His attorneys came to court and attempted to file a demurrer to the indictment, alleging among other things that the ordinance in question was unconstitutional, but Leontas not being present, the court refused to accept it, and later ordered payment on the bond. Leontas appealed.

The Supreme Court merely held that the ordinance was not inconsistent with

the constitution of the state, saying, "The power to 'regulate' the sale of milk includes the power to 'prohibit' the sale of impure milk as referred to in the ordinance; so that, in substance, the ordinance only involves one subject matter."

In New York, a judge of the Court of Special Sessions, one of the lower courts, has held unconstitutional a regulation of the New York City Sanitary Code which prohibits possession of a churn or other device for treating milk, without a permit from the Board of Health. This regulation was held to be unreasonable, because it is the *use* and not mere possession which might be dangerous. People v. Schneider, *et al.*

A Real Guide for Health Officers—A number of unique and particularly valuable features characterize the *Health Officer's Guide* recently issued by the State Board of Health of Wisconsin, where Dr. C. A. Harper is State Health Officer. Not only does this booklet reproduce accurately the state laws on all phases of public health, but it also contains opinions of the Attorney General, abstracts of court decisions pertaining to public health from many states, and discussions of the legal aspects of various health subjects.

The laws, which comprise the latter half of the book, are printed directly from the same plates used for the state code. While this plan causes the page numbers to be peculiar, this slight disadvantage is more than offset by the fact that the laws are given correctly, which is more than can be said for many pamphlet compilations of laws prepared by state health departments.

Since other states may contemplate the issuance or revision of similar booklets, a few constructive suggestions may be in order. The opinions of the Attorney General are presented here in the middle of the book, with apparently no special arrangement. An endeavor should be made to key such opinions to the laws to which they refer. Many of the court decisions have no references at all, and none has more than one citation. The value of these abstracts would be greatly enhanced if dates of the cases were given, together with complete references to all law reporters where the cases may be read in full. Consultation of the table of nearly 500 cases in the book, *Public Health Law*, shows that there are at least three references each for most of the decisions listed. The cases in the Wisconsin pamphlet might also be arranged in a more logical sequence.

Among the other useful material in this health officer's guide are descriptions of the functions of the divisions of the state board of health, discussion of the organization and duties of local health authorities, suggestions for local action, model ordinances and local sanitary regulations, and the rules and regulations of the state board. Although there is a good index, a table of contents would also have been valuable. The arrangement of topics might also be better.

Although a few opportunities for improvement have been pointed out, the general idea and execution of this guide is excellent, and it is a work which should be of great value to health officials in Wisconsin, and of interest to sanitarians in administrative capacities in other states.

The Buzz Saw—"Don't monkey with the buzz saw," says Pennsylvania's *Health* for July-August, 1928, in reporting that a citizen of that state was recently prosecuted and convicted for permitting her children to be on the public highway after the premises had been quarantined for scarlet fever. She had the further honor of policemen at her front door to see that the quarantine was observed.

A similar incident occurred recently in New York, according to an editorial printed on July 3, 1928 in the New York *Sun*, which frequently comments in a progressive manner on public health matters. A man who had smallpox took an automobile ride. It cost him $100 fine for his folly. Another person quarantined for smallpox decided to wander away, but when he was found he was arrested, convicted, and permitted to languish in jail for 30 days. "The health officers mean business when they impose quarantine," says the *Sun*. "They do not play with death. The public they seek to protect from its own recklessness and lack of information should learn to obey their orders." Good advice!

Virginia Also Takes Action—Mr. Routzahn has passed on to this department a mimeographed news release from an unknown source, dated July 6, 1928, which states that a prominent physician of Charlottesville, Va., has been fined $25 for failing to put nitrate of silver drops in the eyes of an infant whose birth he recently attended. The child developed an eye infection, though blindness was averted by prompt medical care by other physicians. It is said that the parents of the child contemplate an action for damages. All this is hearsay, but it emphasizes the good advice, "Don't monkey with the buzz saw of public health."

A reprint from the *Southern Medical Journal* for June, 1928, entitled "Public Health Administration in Virginia," which contains no hearsay, but a number of solid facts, will be sent by the Associate Editor, or by Dr. E. G. Williams, State Health Commissioner, Richmond, Va., to anyone who cares to have it.

"Court Work" and Venereal Diseases—In New York City all women who have been convicted of street walking are referred to the Department of Health for examination by a physician. Those found infected are sent to a hospital, though old offenders and recidivists go to the workhouse. During 1927, a total of 2,481 such persons were examined and 1,190, or 48 per cent, were found infected, according to an item in the *Weekly Bulletin* of the New York City Department of Health for May 26, 1928.

"Menace of the Half Man"—Judge Harry Olson of the Municipal Court of Chicago contributed a brilliant paper on crime and mentality before the Third Race Betterment Conference at Battle Creek, Mich., last winter. An abbreviated report of this address is presented in *Good Health* for July, 1928, and should be read by all persons interested in this important subject.

Judge Olson points out that defects of the emotions are conspicuous to a remarkable degree among the unreformable and dangerous criminals. He describes the psychopathic clinic connected with the Boys' Court in Chicago, to which judges send suspected cases of mental defect. Out of 779 such cases, 654 were found to be suffering from dementia praecox, 109 from psychopathic constitution, and 10 from epilepsy. Dementia praecox was also discovered to be the leading criminal psychosis among persons brought before the Morals Court and the Domestic Relations Court.

One solution proposed by Judge Olson to the problem is to give psychiatric examinations to all school children, so that defectives may be identified and the unreformable type segregated. In order to do this, however, many more experts are needed.

Infantile Paralysis Delays a Trial—A man charged with unlawful possession of intoxicating beverages applied for a writ of habeas corpus on the ground that he had not been given a

speedy trial. The writ was denied because it was shown that there was an epidemic of infantile paralysis in the town where the court sessions were held and therefore a delay of more than 60 days was excusable. This is a California case, Ex parte Venable, 261 Pac. 731.

Report Births or Be Fined—Missouri was admitted to the birth registration area in September, 1927. Since that time 2 physicians to whom this fact apparently meant nothing, have had the pleasure of paying fines for failing to comply with the state law on vital statistics, according to an item in the *Journal of the American Medical Association* for July 21, 1928.

Miscellaneous Items—An International Conference on the Safety of Life at Sea will be held in London in the spring of 1929 to bring up to date the 1914 convention.

A survey of public health administration in the District of Columbia has recently been completed by the U. S. Public Health Service. The local health department is said to be "inadequate and ineffective in many of its component activities."

Cuba has a new law imposing a tax on luxuries, the revenue of which will go to tuberculosis hospitals and other public welfare institutions.

Health work in Soviet Russia is described in the *Monthly Labor Review* of the U. S. Department of Labor for July, 1928, the article being a lengthy review of a recent book on this subject by Anna J. Haines.

A Florida law for the regulation of the practice of pharmacy, which is now under the supervision of the State Board of Health, is given in the *Health Notes* of Florida for July, 1928.

The police power is the subject of an interesting article by L. P. Stryker in the *New York State Journal of Medicine* for July 15, 1928. Mr. Stryker, who is counsel of the medical society, is contributing a series of articles in the legal department of this magazine.

CONFERENCES

September 12-14, Southern Conference of Tuberculosis Secretaries, Biloxi, Miss.

September 17-19, Mississippi Valley Conference on Tuberculosis, Des Moines, Ia.

September 18-21, New England Water Works Association, Montreal, Can.

September 24, 25, 26, New England Health Institute, Burlington, Vt.

September 25, 26, Annual Conference of Indiana State Health Officers, Gary, Ind.

September 25, 28, American Roentgen Society, Kansas City, Mo.

October 1-5, National Safety Council, New York, N. Y.

October 4-6, Association of Military Surgeons of the United States, Baltimore, Md.

October 11-13, Fall Regional Social Hygiene Conference, Louisville, Ky.

October 11-13, Canadian Public Health Association, Winnipeg, Can.

October 11-13, International Association of Dairy and Milk Inspectors, Chicago, Ill.

October 15-19, American Child Health Association, Chicago, Ill.

October 15-19, American Social Hygiene Association, Chicago, Ill.

October 15-19, State Health Officers of Illinois, Chicago, Ill.

October 15-19, American Public Health Association, Chicago, Ill.

FOREIGN

October 29-November 1, Second International Conference on Light and Heat in Medicine, Surgery and Public Health, London, England.

December 28, International Congress of Tropical Medicine and Hygiene, Cairo, Egypt.

BOOKS AND REPORTS

Publicity for Social Work—*By Mary Swain Routzahn and Evart G. Routzahn. New York: Russell Sage Foundation, 1928.* 392 pages. Price, $3.00.

Publicity is an essential aspect of successful social work. Whether one considers securing financial support for an organization, creating public demand for better social legislation, arousing sentiment against undesirable social conditions, or persuading the individual to "Cross Crossings Cautiously," the weapon upon which success depends is publicity. This volume is a manual of publicity technic.

The authors admit that they had expected to be able, after their detailed examination of publicity programs in many organizations and communities, to indicate the fundamental principles of successful publicity. Their studies, however, revealed the fact that there is no commonly recognized or scientifically organized technic for publicity among social service agencies. This treatment, accordingly, undertakes to set forth as an integral part of its analysis the psychological principles underlying effective publicity. Throughout the text the authors bring, from a wide scope of material, the findings of technical research and scientific investigations.

The discussion is by no means theoretical, however, for it keeps close to the material afforded by the experience of actual organizations. Such topics as "Social Work and the Newspaper," "Printed Matter," "Meetings," "Dramatic Methods," "The Intensive Campaign," suggest the range of interest.

The psychological and educational material is sound and to the point. The problems discussed are practical, and there is a wealth of valuable detail. An abundance of illustrative material from widely varied sources lends both interest and concreteness. The book represents a genuine contribution to the field.

FORREST WITCRAFT

The Newer Knowledge of Bacteriology and Immunology—*Edited by Edwin O. Jordan and I. S. Falk. Chicago: University of Chicago Press,* 1928. 1196 pp. Price, $10.00.

This book does not purport to be a text, nor yet a comprehensive survey of the whole field. It is "an attempt to make the latest results of investigation in various lines of bacteriology and immunity available for students and active workers." The editors state that it is their hope that the book will serve to promote research both by furnishing landmarks of progress and by affording suggestions on significant unsolved problems. The book partakes of the nature of a symposium, a type of work quite popular at present. The first portion is largely devoted to bacteriological matters and the latter portion to immunology.

So far as suggestiveness is concerned those chapters on immunological subjects are distinctly more stimulating to the worker and come more nearly to filling the claims of the editors than the chapters on bacteriology. The former are often mere reviews, largely of a textbook nature, only a relatively small portion of the material being "newer." In approximately one-third of the book there are more than a hundred references to literature prior to 1900. Inasmuch as the book is inconveniently large, much of the older material, which may be found in standard texts, might well have been omitted. Certain chapters might also have been combined without appreciable loss to the value of

the book—for example, I on morphology and IV on morphological changes during growth, V on growth curves and VI on the rise and fall of bacterial populations, XXIII on soil microörganisms and XXVI on the relation of organisms to soil fertility, and several others. Other chapters have little relation to the title or the subject, such as XXXIII, which, though excellent, treats entirely of the mechanical aspects of pasteurization.

Perhaps the chapters of most value to the worker in pure bacteriology are those which seem to have least connection. Chapters XII on oxidation-reduction potentials, XLI, which treats of the general aspects of filterability, and X on atoms, ions, salts, and surfaces contain information which, though not in itself especially new, is important since the recognition of such subjects as affecting bacteriology is not of long standing.

Certain chapters might well be omitted. Chapter XXX on bacteria in milk is largely the history of the confusion in nomenclature of certain milk organisms. In reading chapter XXXI on bacteria in dairy products, which is filled with general non-technical information, one gets the feeling of being superficially escorted through an industrial plant, or in reading chapter XXXIV on foods, one is reminded of the advice of a retained technical expert to a layman.

Certain chapters are stimulating and give specific suggestions for handling problems. Especially so are Norton's two chapters on water bacteriology and on the action of ultra-violet, and Tanner's chapter on yeasts. On the other hand, one reads too often statements similar to that of Kahn on page 857: "numerous problems in connection with the nature of the reaction are yet to be solved," though the nature of such problems is not disclosed.

Two or three points of confusion which have been rather common in recent literature have been retained in the book. In at least two places (pages 19 and 1115) the authors confuse pH with acidic or basic properties of a compound. This confusion seems much more general than it should be and often leads to misconceptions and misinterpretation both of one's own data and of published results. Physical units are at times confused, as on page 373, where energy is expressed in watts.

The book has several rather serious omissions for a work of its claims. There is practically nothing included on cytological problems. A reading of chapter VII will indicate the importance of cytology, an aspect in which modern researches on dissociation have stimulated renewed interest. Despite the personal opinion of an author regarding receptor analysis, it should certainly be given more than simple mention.

In several places the reviews do not seem quite up to date. Two cases are the omission of reference to the theory of fermentation of A. L. Raymond (*Proc. Natl. Acad. Sci.*, 11: 622, 1925) in connection with a discussion of theories of fermentation in chapter XVI, and omission from chapter XI of mention of the important work of Gibbs, Batchelor and Sickels (*J. Bact.* 11: 393, 1926), on the effect of surface tension on bacterial growth—a piece of work which leads to conclusions not in accord with those given by the author of this chapter in his own work. One can hardly accept the statement in this chapter that if union between toxin and soap is chemical, "all toxins reacting with a given soap would necessarily be considered identical chemically."

On page 303, the footnote is in error. These methods were not officially approved by the Laboratory Section of the American Public Health Association, and the Standard Methods Committee is not authorized to approve such procedures; therefore the statement that such approval was given is an error.

There is great lack of uniformity in structure of chapters, not only in the text but also in the references. The name is not quite broad enough to cover the subject matter treated since there are chapters on yeasts and molds and protozoa. Many of the chapters one would wish to have available, but one might not wish to be forced to acquire the entire book for those chapters, especially since more than a few have such similarity of structure and content to single articles or books by the same authors, that reprints would serve the same purpose and be less unwieldy to use. A proper grouping of the chapters into several volumes which might be purchased separately would be an improvement.

As a whole, the book is exceptionally free from typographical errors. The only one noted which is likely to be taken as an error of text is a sign of one of the values for free energy change on page 324. M. P. RAVENEL

Proceedings of the Tenth Texas Water Works Short School—*Austin, Tex.: Texas Section of the Southwest Water Works Assn.*, 1928. 300 pp. Price, $1.00. 40 per cent off on 10 or more copies.

The volume is divided into two sections, one devoted to Water and the other to Sewage and covers 294 pages. The two subjects are rather fully gone into, considering that the material was prepared for a 4-day program which had to represent the varied interests of the water and sewage plant operators in Texas. The papers were prepared by some of the foremost men in their respective fields in America and foreign countries.

H. W. Streeter of the U. S. Public Health Service discusses filter plant loadings and stream pollution; microscopic life in water is treated by Dr. Asa Chandler of the Rice Institute, Houston, Tex.; Dr. Karl Imhoff tells how he calculates the capacity of sludge digestion tanks; Arthur J. Martin, consulting engineer of London, discusses activated sludge problems from the English standpoint; while G. L. Fugate and J. C. McVea, engineers of Houston, Tex., disclose some of the secrets of a successful activated sludge plant in Texas as exhibited by the Houston installation. Dr. Willem Rudolfs, of New Jersey Experiment Station fame, points the way toward a comprehensive sewage research program for Texas.

The special water problems of Waco and St. Louis are discussed by a water superintendent and a water commissioner, respectively, who have had charge of their plants for a number of years. Some of the recently installed and especially interesting sewage plants are described and illustrated, including that at Fort Worth, Houston, Jacksonville, and Waco. E. G. EGGERT

Water Purification—*By Joseph W. Ellms, (2d ed.) New York: McGraw-Hill*, 1928. 594 pp. Price, $7.00.

It is somewhat over ten years since the first edition of this important volume was issued by Mr. Ellms. At the time of its first appearance it contained approximately 485 pages of an excellent summary of water purification practices and devices, as of that date. It was written in simple style, reasonably well illustrated and with presentation of tabular and graphical material, helpful to the general, as well as to the technical, reader.

The second edition, as well as the first, contains information of value to the public health profession. It reviews the classification of natural waters, the principles of transmission of disease through drinking water, the effect of improved water supplies upon health and the detailed procedures and mechanisms of treatment by which the removal of

various objectionable constituents is accomplished. It has been and should continue to be one of the few modern authorative and fairly comprehensive texts on water supply treatment.

The reviewer is somewhat in doubt as to whether the volume in hand may be logically designated as a second edition. After careful survey of its contents, one finds that it is virtually the first edition repeated verbatim with additions almost entirely restricted to new bibliography, photographs and short portions of new text inserted bodily within the old, and frequently merely added to existing, chapters. New material is presented on the strainer systems of filtration plants, mixing devices prior to coagulation, the manufacture of aluminum sulphate, discussions of motors, efficiency and cost of operation of rapid sand filters, the effect of hydrogen-ion concentration of natural waters (a new chapter), on disinfection of water (in some minor additions to the chapters), the application of iodides in the treatment of water (one page), and in the amplification of discussion on water softening, boiler compounds, recarbonation and iron removal. The additions are of interest and helpful, but their introduction into the bodies of the text, frequently without any adjustment of previous text, leaves something to be desired.

The issuance of a second edition in the form followed in this case leads to some disconcerting inconsistencies, as, for example, in Chapter 29, page 451, where it is stated that "Chlorine or the hypochlorites are, therefore, merely agents for the production of oxygen under conditions which render it extremely active." Somewhat the opposite conclusion is indicated on page 480, in Chapter 30, where at least some doubt is indicated as to the oxidation effect of chlorine compounds in disinfection and otherwise. The inconsistency probably has its origin in the fact that the earlier chapter has undergone virtually no changes in language over the edition of 1917. The same criticism applies to the bulk of the present edition.

Unfortunately some of the typographical errors of the first edition are carefully repeated in the second.

Although approximately 17 pages are devoted to power plant pumping machinery, etc., in Chapter 23, the wisdom of including such material in this text is debatable. It is hardly possible to devote sufficient space to the topics included therein to make them either authoritative or comprehensive. The discussion in two pages of motors for centrifugal pumps hardly does justice either to the subject matter or to the author.

The text still represents one of the most valuable sources of reference for information on water purification practice. The criticisms do not refer primarily to the fact that the second edition has made the first less helpful, but that it might have made it more helpful, with more complete revision of text. It is possible, for instance, that the discussion of the state of the art in ozone, ultra-violet light and algicide treatment does not require any change in a text 10 years old, in order to give an accurate picture of present-day practice, but the reviewer has some doubt about it.

ABEL WOLMAN

Heredity and Human Affairs—*By Edward M. East. New York: Scribner*, 1928. 325 pp. Price, $3.50.

Professor East is not only an authority on the phenomena of heredity and genetics, but a thinker with a clear insight into the significances of investigations in this important field and a writer with a facile pen, some knowledge of literature, and a sense of humor. His latest book dealing with heredity in relation to human traits and human problems is therefore authoritative, up-to-

date, very lucidly written and withal quite entertaining.

Among his chapters are those dealing with the grammar of heredity; heredity and sex; inheritance of human traits; heredity and environment; marriage between near kin; racial traits; race problems; genius; mediocrity, and education; the lower levels of humanity; the survival of the underman; and immigration.

His advice on cousin marriages is caution, because of the prevalence of objectionable recessive traits, particularly defective conditions of the nervous system, in man. Inspection of family histories is advised before such marriages.

In matters of education, he pleads for more attention to, and more expenditure on the more intelligent child, and for better teachers. Segregation and sterilization are the effective means of restricting the increase of the worst types of human defectives, but much may be done with the higher grades of defectives, the morons, the neurotics and the intermittently insane, by educational measures. Dr. East is not sanguine that social inadequacy will ever be eliminated by any combination of eugenics and euthenics, but does suggest that the disastrous results of a bad heredity combined with a bad environment may be mitigated by the panaceas dear to the heart of the social worker.

He is less optimistic than Pearl with regard to the effect of the declining birth rate of the professional and related occupational classes in our population. East points out that superiority is not the result of mutations, but is rather due to fortunate combinations of desirable genes. Eugenics and genetics are not all "blather." The extinction of families supplying such genes in larger proportion will have its effect in time.

Immigration in recent years has tended to lower the quality of the national stock. When forced by economic necessity it tends to lower the biological quality of the race and immigrant competition tends to sterilize the native population.

The relation of the unintelligent to art, science, and civilization is seen in anti-evolution agitation, anti-vaccination propaganda, and anti-vivisection societies. "Science will be hounded, coerced, and suppressed, possibly destroyed" by such agencies. Social reforms are not panaceas. The epigram of the London *Spectator* on the "Modern World" is in point:

> Science finds out ingenious ways to kill
> Strong men, and keep alive the weak and ill—
> That these a sickly progeny may breed,
> Too poor to tax, too numerous to feed.

Genetics gives fair warning to the sensible that civilization is in a dangerous situation, for which only one remedy is specific. CHARLES A. KOFOID

School Posture and Seating—*A Manual for Teachers, Physical Directors and School Officials. By Henry Eastman Bennett, Ph.D. New York: Ginn,* 1928. 320 pp. Price, $2.00.

This book is a combination of a discussion of posture from an anatomical and a physiological point of view, a report of a study of sitting posture of school children and a description of a method by which the author has arrived at his conclusions of what constitutes a proper school seat.

All three parts are treated scientifically, with the possible exception of the study of the posture of school children where the objectivity of the author's tests might be questioned. There is no doubt that a chair in which a school child can sit correctly is important; but this importance seems a bit over-emphasized in the discussions on the results of bad posture. The appearance of our "girl graduates" each June suggests an exaggeration in the following statement: "The universal occupation of girlhood

is 'going to school'; and here, despite the insistent reiteration of school hygienists, despite the fact that posture habits established in this formative period almost inevitably affect the whole future physical life, figures prove posture to be extremely bad."—and can we rely absolutely upon these figures? And still again there is no proof that school sitting posture permanently affects the habitual posture of children.

Modern practices in education give much more freedom in the schoolroom than formerly, and children do not sit in one seat for long periods of time. And again, flexibility of the spine and general muscle tone have more to do with habitual posture than the chairs on which we sit.

The book as a whole is a very valuable contribution to the subject of posture, and Mr. Bennett takes a broad view, but it must be kept in mind that posture is a complicated subject with no evidence as yet by which we can determine whether it is a cause or a result of many of the disorders discussed in this book. The type of seat described in detail coincides with studies made by the American Posture League and all who have responsibility in the seating of school children should read this book.

ETHEL PERRIN

Proceedings of Fifth Annual Short School, Texas Association of Sanitarians—*Houston, Tex., Nov. 1-4, 1927.* 136 pp. Price, $1.00.

This pamphlet containing 144 pages is divided into six sections. The first covers numerous questions, among which might be mentioned discussions of the field of non-medical sanitarians, Texas schools and sanitation, practical epidemiology, railroad safety campaigns and housing.

The second section is devoted entirely to milk sanitation. The status of this work in Texas and Louisiana is discussed. Bacteriological tests of water and algae are treated in the third or laboratory section, while section 4 covers sewage disposal and related subjects like privies, septic tanks and stream pollution.

Section 5 is devoted to mosquito control and means for financing such work. The proceedings and minutes of the meeting are contained in the last section.

ARTHUR P. MILLER

A Sound Economic Basis for Schools of Nursing and Other Addresses—*By Mary Adelaide Nutting, R.N., M.A. Putnam,* 1926. 372 pp. Price, $2.50.

In a series of published addresses given at various times over a period of 22 years, Miss Nutting presents much of the history of the struggles to provide the sick with better nursing care through the advancement of education for nurses. These addresses are now collected in one volume.

Anyone reading this book cannot but be impressed by the sympathetic way in which the problems are treated; by the rare and deep compassion for the sick and a firmly rooted desire to provide them with intelligent, skilled, efficient care; sympathy for the administrative officers of the hospital; and understanding of the difficulties of the graduates who are unprepared many times for the wider fields of professional life, entering, as they do, into every level of society.

The establishment of the proper relationship of the hospital to the school of nursing is stressed. The latter should exist solely for the purpose of educating the nurse. Trustees or managers willing to accept the responsibility of providing funds for maintenance and for its growth and development, should be vested with the power to control and manage the school.

To the ever-present urgent problem of

financing the schools is apportioned much space. Three ways of securing funds are offered for consideration; namely, through public funds derived from taxation, private funds by gifts, and fees from students.

The ideal school of the future will have university affiliation; endowment fees paid by the students with liberal provision for scholarships and local funds for those who are unable to meet expenses; a shorter course for college graduates; high entrance requirements; sound instruction in the preliminary sciences; adequate libraries and equipment; shorter hours on duty; time for rest and vacation; more capable paid teachers, and self-imposed discipline. The endowment can provide for all, but in order to secure endowment funds the public must first be acquainted with the real need of the school.

A wealth of experience in educational and administrative fields qualifies the distinguished author to speak authoritatively on questions relating to the present inability of schools to advance to a place where nursing education is comparable to that which is offered in other professional schools.

The book amply substantiates the arguments in favor of the fundamental need of the schools of nursing.

MIRIAM AMES

BOOKS RECEIVED

THE CARE OF THE PATIENT. By Francis Weld Peabody. Cambridge: Harvard University Press, 1928. 48 pp. Price, $1.00.

HOSPITAL ORGANIZATION AND MANAGEMENT. By Capt. J. E. Stone. London: Faber & Gwyer, 1927. 642 pp. Price, $6.50.

COLLEGE TEXTBOOK OF HYGIENE. By Dean Franklin Smiley and Adrian Gordon Gould. New York: Macmillan, 1928. 333 pp. Price, $2.00.

FUNDAMENTAL GYMNASTICS. The Basis of Rational Physical Development. By Niels Bukh. New York: Dutton, 1928. 202 pp. Price, $2.00.

FOOD PRODUCTS, THEIR SOURCE, CHEMISTRY AND USE (3rd rev. ed.). By E. H. S. Bailey and Herbert S. Bailey. Philadelphia: Blakiston, 1928. 563 pp. Price, $2.50.

HOW YOU CAN KEEP HAPPY. By Wm. S. Sadler. Chicago: American Health Book Concern, 1926. 292 pp. Price, $3.00.

DICTIONARY OF AMERICAN MEDICAL BIOGRAPHY. By Howard A. Kelly and Walter L. Burrage. New York: Appleton, 1928. 1364 pp. Price, $12.00.

THE OPIUM PROBLEM. By Charles E. Terry, M.D. and Mildred Pellens, for Committee on Drug Addictions. New York: The Bureau of Social Hygiene, 1928. 1042 pp.

GOITER PREVENTION AND THYROID PROTECTION. By Israel Bram, M.D. Philadelphia: Davis, 1928. 327 pp. Price, $3.50.

OBSTETRICAL NURSING (2nd ed. rev.). By Carolyn Conant Van Blarcom. New York: Macmillan, 1928. 575 pp. Price, $3.00.

A MANUAL OF TUBERCULOSIS LEGISLATION. By James A. Tobey. New York: National Tuberculosis Association, 1928. 86 pp. Price, $ .50.

INFANCY AND HUMAN GROWTH. By Arnold Gesell. New York: Macmillan, 1928. 418 pp. Price, $3.50.

PRESCRIBING OCCUPATIONAL THERAPY. By William Rush Dunton, Jr. Springfield, Ill.: Charles C. Thomas, 1928. 142 pp. Price, Cloth, $2.10, Paper, $1.35.

STORY OF ELECTRICITY AND A CHRONOLOGY OF ELECTRICITY AND ELECTROTHERAPEUTICS. By Herman Goodman. New York: Medical Life Press, 1928. 62 pp. Price, $1.50.

MANUAL OF FOOD LAWS. Compiled by the Staff of Los Angeles County Health Department. Los Angeles: Harold Roe, 1928. 138 pp. Price,

THE INTELLIGENT WOMAN'S GUIDE TO SOCIALISM AND CAPITALISM. By Bernard Shaw. New York: Brentano's, 1928. 495 pp. Price, $3.00.

THE HEALTH AND HAPPINESS SERIES. By S. Weir Newmayer and Edwin C. Broome. New York: American Book Co., 1928.

THE PLAY ROAD TO HEALTH.	144 pp.	Price $.64
HEALTH HABITS.	207 pp.	" .72
THE WAY TO KEEP WELL.	264 pp.	" .84
THE HUMAN BODY AND ITS CARE	314 pp.	" .96

THE COMMUNITY USE OF SCHOOLS. By Eleanor T. Glueck. Baltimore: Williams & Wilkins, 1927. 222 pp. Price, $3.00.

WATER PURIFICATION. (2d. ed.) By Joseph W. Ellms. New York: McGraw-Hill, 1928. 594 pp. Price, $7.00.

A SELECTED PUBLIC HEALTH BIBLIOGRAPHY WITH ANNOTATIONS

RAYMOND S. PATTERSON, PH.D.

Scientific Movies—Pitfalls encountered in the production of surgical movies should be of interest to those who contemplate the making of motion pictures dealing with health.

ALBEE, F. H. Science goes to the Movies. M. J. & Record, 128:1 (July 4), 1928.

Gonorrheal Vaginitis—The record of admissions to a child-caring institution shows gonorrheal vaginitis more prevalent in winter and spring than in summer and fall. The preponderence of chronic to acute infections is shown.

BLUM, J. Gonorrheal Vaginitis of Infants as a Seasonal Disease. Arch. Pediat., 45:6 (June), 1928.

Immunity in Scarlet Fever—Three papers dealing with scarlet fever, offering evidence and suggesting explanations for this phenomenon: skin sensitivity is lost much more quickly than antitoxin is produced in the blood following prophylactic treatment or following the appearance of the rash during the disease. The importance of hypersensitiveness as a factor is stressed in propounding the hypothesis that the disease is due perhaps to a protein poison rather than a toxin.

COOKE, J. V. Scarlet Fever. Am. J. Dis. Child., 35:6 (June), 1928.

College Athletics and Longevity—A statistical study of the lives of 5000 college athletes (from 1880 to 1905) which indicates that the group studied presented a favorable mortality picture. It is the author's opinion that athletic activities in the loosely supervised earlier period did some damage.

DUBLIN, L. I. Longevity of College Athletes. Harpers July, 1928.

Neurologic Infections—A summary of what is known of the epidemiology and etiology of epidemic meningitis, poliomyelitis, and epidemic encephalitis. As valuable as the name of its author would promise.

FLEXNER, S. Obvious and Obscure Infections of the Central Nervous System. J. A. M. A. 91:1 (July 7), 1927.

Heart Disease Prevention—Another of the multitude of British papers on heart disease and rheumatism. There is probably nothing very new or startling in this one.

FORDYCE, A. D. The Prevention of Heart Disease. J. State Med., 36:7 (July), 1928.

Oral Typhoid Immunization—A review of the results of about a half million vaccinations *per os* against typhoid fever. The theoretical advantages of Besredka's method are discussed.

GARBAT, A. L. The Oral Method of Prophylactic Typhoid Immunization. M. J. & Rec. 128:2 (July 18), 1928.

Chicago Communicable Disease Survey—A committee report of a survey (with criticisms and suggestions) of Chicago health department practice in regard to the control of communicable disease, school hygiene, sanitation, education, etc.

GERSTLEY, J. R., et al. Survey of the Communicable Disease Situation in Chicago. Am. J. Dis. Child., 35:6 (June), 1928.

A Hundred Years of Epidemiology—This paper is the first dealing with the history of epidemiology in Great Britain containing many useful references and quotations for the writer upon health topics.

HAMER, W. H. History of Epidemiology. Lancet, 1:26 (June 30), 1928.

Plural Nature of Vitamin B—Irradiated vitamin B carriers lose their growth-promoting factors but retain

their anti-neuritic properties; autoclaved specimens have the reverse characteristics. Used together, they supplement each other.

HOGAN, A. G. and HUNTER, J. E. The Plural Nature of Vitamin B. J. Biol. Chem., 78:2 (July), 1928.

Mental Hygiene—This rather general outline of the possibilities of mental hygiene as a public health function would make an excellent introduction to a book. It lacks suggestions of method.

HILL, T. W. Mental Hygiene and the Child. Pub. Health, 41:10 (July), 1928.

Measles Prophylaxis—Additional evidence is offered that Tunicliffe's anti-measles goat serum will prevent measles if given early and modify the disease if given any time during the incubation period.

HOYNE, A. L. and PEACOCK, S. Prevention and Modification of Measles with Antimeasles Diplococcus Goat Serum. Am. J. Dis. Child., 35:6 (June), 1928.

Ricinoleated Vaccines Again—A very brief and pointed note answering Kozlowski's contention that ricinoleic acid causes abscesses and hence should not be used. The author points out that the material purified with barium, as used by Kozlowski, was discarded several years ago and that the type of material used in ricinoleated vaccines causes no ulcerations.

LARSON, W. P. Ricinoleated Streptococcic Vaccines. J. Immunol., 15:4 (July), 1928.

Rural Medical and Nursing Service—The methods by which medical and nursing services are subsidized in the highlands and islands of Scotland are recounted for the benefit of the frontier nursing service of Kentucky.

MACKENZIE, L. Medical and Nursing Service. Lancet, 2:3 (July 21), 1928.

Etiology of Encephalitis—Is epidemic encephalitis caused by toxins from organisms in the respiratory or gastro-intestinal tract, a cultivable bacterium, or a filtrable virus? Although most research points to the latter, the author concludes that the etiology remains unproved.

NEAL, J. B. The Present Status of the Etiology of Epidemic Encephalitis. J. A. M. A., 91:4 (July 28), 1928.

Official and Unofficial Relationships—An interlocking directorate by which tuberculosis associations may be made to work harmoniously with the health department and the medical society is proposed. A very worth-while suggestion.

NELBACH, G. J. Fundamentals in Tuberculosis Work with Respect to Voluntary Unofficial Associations. New England J. Med., 198:18 (June 21), 1928.

Liquid Petrolatum and Digestion—Studies of fecal elimination by dogs and human subjects indicating that liquid petrolatum does not interfere with the digestion and absorption of food.

OLSEN, A. B. Effect of Liquid Petrolatum Given by Mouth on Digestion and Absorption of Food. J. A. M. A., 91:3 (July 21), 1928.

Grains and Vegetables in Diet—Experiments are reported indicating the advantage of using whole grains without increasing costs of diet. A freer use of vegetables raises amounts of vitamins, increases laxative properties, and promotes assimilation of iron. Further experiments are recorded indicating the value of eggs when added to otherwise balanced diets.

ROSE, M. S., and MCCOLLUM, E. L. Studies in Nutrition. J. Biol. Chem., 78:2 (July), 1928.

The British Milk Supply—An interesting round-table discussion of milk supply supervision in Great Britain. The introducer discusses "milk as a food and milk as a poison," and quotes someone as saying he'd as soon see graded water as graded milk.

WYNNE, F. E. Present Position of the Milk Supply, J. Roy. San. Inst., 48:1 (July), 1928.

HEALTH DEPARTMENT AND OTHER REPORTS

IRA V. HISCOCK

Bellevue-Yorkville Health Demonstration—The annual report for 1927 consists of four parts, an historical summary, an account of the year's activities, a statistical report of volume of work, and a financial statement. A study of school medical inspection in the 24 schools of the district, a study of stillbirths, and a study of street accidents have contributed basic information of considerable interest. Accidents of all types in the district are responsible for more than 10 per cent of the general mortality. Campaigns for the prevention of colds (32,000 pieces of literature distributed), and of diphtheria (3 months' intensive drive for immunization, 31,000 pieces of literature and 2,300 posters distributed, among other activities), and many other health education measures are described. Several important clinics have been opened.

During the year, there was a total attendance at the various clinics and services of 32,488, of which 12,921 visits were to the baby health station, located within demonstration headquarters. There was also an attendance of 18,559 at the 646 meetings held at headquarters for educational purposes. Of the 46,756 home care visits made in the district by the agencies located in headquarters, 21,330 were directly for bedside care and generalized nursing service by the Henry Street Settlement, 12,593 home care visits by the Department of Health nurses, for infant welfare (4,885), control of contagion (3,835), and tuberculosis supervision (3,875). Detailed statistical tables conclude the report.

San Diego, Calif.—In 1927, a population of 114,900, a birth rate of 23.7, and a resident death rate of 13.9 (not corrected 18.2), are recorded for this city. An infant mortality rate of 60.6 is compared with a rate of 46 for the previous year, 99 of the 165 infant deaths occurring in the first month of life.

During 1927, there were reported 977 personal injuries resulting from motor vehicle accidents occurring in the city, as compared with 1,039 the previous year. Of this number, 282 were pedestrians. A total of 35 persons were injured in automobile and street car accidents as against 54 in 1926. There were 37 deaths from this cause as compared with 46 the previous year. The noted improvement is encouraging in view of the efforts made during 1927 to reduce the number of automobile accidents, by the traffic commission, the police department, the courts, the public safety committee, the local press and others.

The child hygiene division report includes 55 prenatal clinics with 279 attending, 93 well baby conferences with 2,538 attending, 696 prenatal nursing visits, 363 maternity visits, 878 visits to sick babies, 320 instruction visits, 465 emergency visits and 44 Little Mothers' classes.

Rockefeller Foundation—The president's review for 1927 contains a stimulating account of health activities in many lands. A list of 20 of these activities indicates the broad scope of the Foundation's interest: aided in local health organization in 85 counties of 6 states in the Mississippi flood area; operated an emergency field training station for health workers in this region besides contributing toward the support of 9 other training centers elsewhere; assisted 9 schools or institutes of public health and 3 departments of hygiene in university medical schools; gave aid to 17

nurse training schools in 14 countries; supported the Peking Union Medical College; paid 2 million dollars toward a new site for the University of London; helped Brazil to maintain precautionary measures against yellow fever; continued studies of that disease in West Africa on the Gold Coast and in Nigeria; had a part in malaria control demonstrations or surveys in 8 states and 11 foreign countries; aided 19 governments to bring hookworm disease under control; contributed to health budgets of 268 counties in 23 states of the American Commonwealth and of 31 similar governmental divisions in 14 foreign countries; helped to set up or maintain public health laboratory services or divisions of vital statistics, sanitary engineering, or epidemiology in the national health services of 19 countries abroad and in the state health departments of 16 American states; made grants for mental hygiene work in the United States and Canada; provided funds for biological research in universities; helped the League of Nations to conduct study tours or interchanges for 125 health officers from 44 countries, to supply world-wide information about communicable diseases, to train government officials in vital statistics, and to establish a library of health documents; provided fellowships for 864 men and women; made appropriations for improving the teaching of premedical sciences, and for expenses of hospitals in China, and for equipment and literature for medical centers; lent staff members as consultants and made surveys of health conditions and of medical and nursing education in 14 countries.

In discussing the relation of private agencies and public authorities, this significant statement is made:

> Under anything like normal conditions the voluntary health association does its best work when it keeps always in mind the aim of strengthening the official organization of the community. Every private agency should be only too glad to turn over to an efficient health department a service or activity which has been built up by voluntary effort. To be sure, it may be at times the duty of a private association to attack openly an incompetent or politically corrupt health administration, but ordinarily friendly support of even a weak official will prove a sound policy. To express confidence that he is going to do the right things will help him to meet expectations.

It is interesting to learn that Yugoslavia requires of every medical student 6 months' service with a department of health. In considering the training of doctors for a new era, it is emphasized that the idea of preventive medicine will never fully prevail until more doctors enter the field as leaders, until physicians in general understand and actively support public health activities and until they themselves seek to keep people well through periodic examinations and by advice about personal hygiene. "If this is ever to happen, medical schools will have to change their courses and their attitude."

Association of Tuberculosis Clinics, New York, N. Y.—The 1927 report shows on the inside cover the location of the 15 clinics in the various districts of Manhattan. The membership of this voluntary organization includes 29 tuberculosis clinics which function either under municipal or private organizations. In general, the activities are confined to clinic and home work among the tuberculous and the exposed families of these patients. The objects include the promotion of clinic control of tuberculosis in the city, the development of uniform methods of operation and the provision of equally efficient care throughout the city, the elimination of duplication, the keeping of patients under observation until satisfactorily cared for either in a sanatorium or hospital, the gathering of uniform statistics, the coördination of activities, and the assistance of the department of health in its control of tuberculosis.

Important studies were carried on during the year. More than 16,000 children were treated in these clinics in which more than 37,000 persons were examined, among whom were 9,362 cases of tuberculosis. The clinic attendance was 93,356, of which number 36,891, or 1 out of every 3, were visits by children. In addition, more than 46,000 home visits were made by the clinic nurses to tuberculosis cases or their families, and 9,608 more to social or medical agencies on behalf of clinic patients. The data for these clinic patients and services are analyzed in detail and valuable statistical tables are included.

Miami County, O.—The population of this county health district in 1927 was estimated as 26,502, with only 0.4 per cent colored and 0.4 per cent foreign born. A birth rate of 15.5, a crude death rate of 11.2, a tuberculosis death rate of 3.4 (per 100,000) and an infant mortality rate of 46.1 were recorded. Of 19 infant deaths, 14 occurred during the first month. One nurse is employed by the Board of Health, and one by the state and federal government, but their work is arranged on a generalized basis, with a nurse employed jointly by one of the local boards of education and boards of health acting as supervisor. The health officer is secretary-treasurer of the county public health league, and also of the county medical society, and is medical director of school work in Troy. There are other indications in the report of interesting coöperative enterprises. Forty-nine per cent of the school children are protected from diphtheria. A gross per capita expenditure of 39 cents for the year is reported by the department.

Victoria, Australia—A new code of duties of medical officers of health has been issued by the Commission on Public Health. Furthermore, the Health Act 1919, requires the appointment of qualified inspectors by councils, but allows the retention of long-service inspectors. At present, the 1927 report states, 81 councils employ inspectors qualified by examination, and 82 employ inspectors qualified by 5 years' service before the passing of the Act, while 31 were granted exemption. The combination of neighboring municipalities in making joint appointments of full-time inspectors is encouraged. It is also interesting to observe from this report that diphtheria immunization, particularly of school children, is gradually being undertaken in different districts.

Manchester, N. H.—The Health Officer of Manchester is also superintendent of the isolation hospital. The city of 82,500 population in 1927 expended 96 cents per capita, including 33 cents per capita for the hospital. The staff organization is shown in the first 2 pages of the report, and this is followed by a 1-page statistical summary for the last 2 years. The lowest general death rate ever recorded for the city is that of 1927—10.55. A birth rate of 20, an infant mortality rate of 71, a tuberculosis death rate of 56 (per 100,000), and a diphtheria death rate of 2.4 are noteworthy.

Diphtheria prevention work started in November, 1921. During that year, 469 cases and 31 deaths were recorded, as compared with 9 cases and 2 deaths in 1927. A prenatal and preschool child service is being developed by the district nursing association in coöperation with the local medical association and the health department. Births are analyzed in the report by months, wards, nativity, and infant deaths are classified by ages, months, and cause. Of 108 infant deaths during the year, 76 occurred in the first month of life, 72 being classed as due to congenital or early infancy causes. By legislative enactment, on and

after June 1, 1928, all milk sold in restaurants, lunch rooms, or on stands must be dispensed in the original package. The report contains several interesting statistical tables with descriptive text.

Cincinnati Dental Survey—As a result of the formation in 1922 of the Mouth Hygiene Council of the Cincinnati Public Health Federation, there has recently been completed and published a survey report of community dental facilities. The purpose of the council is stated to be to coördinate the work of the organizations in the city, which are doing any phase of mouth hygiene work; to eliminate any duplication that may exist, and to formulate plans for meeting needs which now exist or which may arise and which are not adequately met.

In Cincinnati in 1925, with a population of 408,559, there were 396 dentists (1 to 1,107 persons) and 901 physicians (1 to 453 persons). The ratio of dentists to population in the United States is 1 to every 1,882 persons. All general hospitals in the city render service in oral surgery and extraction. Prophylaxis, treatment, X-ray, laboratory, referred cases and observation seem to be services common to most of them. All children entering Children's Hospital on general service and all clinic patients including 2 years of age, are given routine dental examinations. The dental department is combined with the surgical, so that extraction and surgical procedures may be carried out in one of the operating rooms. Interesting data are submitted for both general and special institutions.

The Public Dental Service Society, in coöperation with the Board of Education, serves pupils in public schools. Certain health centers and dispensaries maintain completed services, while the dental clinic of the Babies' Milk Fund Association, for example, is limited to the care of expectant mothers and children of preschool age. As in many other cities, the facilities for adults are limited, although a few organizations and health centers are attempting to meet this situation. The scope of these activities and the organization of services are detailed in this interesting report of 52 pages.

Among the suggestions for a community dental program, it is recommended that the excellent opportunity for educational and dental inspection work in connection with the summer round-up of preschool children, be utilized. It is further stated that the entire service of dental examinations, dental prophylaxis and curative work for school children who cannot afford to pay, should ultimately be conducted by the Board of Health entirely at public expense, and that this should include adequate supervision. It is felt that education in dental hygiene among school children will be most effective if incorporated in a general scheme of health education and training in health habits. The Board of Health has established in its health center a chair for corrective dental work for adults—at present limited to patients registered in the tuberculosis and venereal disease clinics. It is recommended that this service shall be made available for other patients. "Further provision for adult dental service should be provided by the outpatient department, especially to provide for indigent cases referred by family service agents."

NEWS FROM THE FIELD

DR. FRANCIS HONORED

EDWARD Francis, M.D., of the U. S. Public Health Service, was presented with a gold medal by the American Medical Association at its annual meeting held in Minneapolis, Minn., in June, for his research work on tularemia. The committee on awards in making the presentation considered the results obtained by Dr. Francis the most important medical work of the year. Dr. Francis is recognized as the outstanding authority on this disease in the United States. While studying his first case of the disease in Utah, Dr. Francis fell a victim to tularemia and has since devoted his time to the prevention and cure of the disease.

Tularemia was discovered in a ground squirrel in Tulare County, Calif., in 1910 by Dr. G. W. McCoy of the U. S. Public Health Service.

MICHIGAN PUBLIC HEALTH ASSOCIATION

THE Michigan Public Health Association held its midsummer meeting July 14 at the University of Michigan, Ann Arbor, Mich. Members attended the Public Health Institute which was in session that day. County and district health units were the principal subjects discussed under the leadership of Senior Surgeon L. L. Lumsden of the U. S. Public Health Service, and Guy L. Kiefer, M.D., Commissioner of Health, State of Michigan. Other sessions were devoted to "Our Present Knowledge of Cancer," by A. S. Warthen, M.D.; "Tularemia," Walter M. Simpson, M.D.; "Typhoid Fever," L. L. Lumsden, M.D.; "Rabies," Haven Emerson, M.D.; and "Health Economics," Nathan Sinai, M.D. Assistant director of the National Committee on the Cost of Medical Care. John Sundwall, M.D., president of Michigan Public Health Association chose as the subject of his presidential address, "The Physician and the Layman in Public Health Work."

CANADIAN FARMERS' HEALTH PROTECTED

DOCTORS and hospital facilities are brought to the door of the Canadian farmer living in the western prairie provinces, by the traveling clinics that have been instituted to serve the isolated rural districts. Each clinic in this rural medical service includes 3 nurses, 2 doctors and a dentist. In the case of a tonsillectomy and the removal of adenoids, one doctor performs the operation while the other doctor remains behind for 24 hours after the clinic has moved on to supervise the convalescence of the patients.

During 1927 the provinces reported the following births per 1,000 population: Manitoba, 22.9; Saskatchewan, 25.0; Alberta, 23.8; British Columbia, 17.4. The corresponding deaths for these provinces respectively were: 8.3; 7.4; 8.5, and 9.6. This report was made by the Department of Colonization and Development of the Canadian Pacific Railway.

INCREASE OF CANADIAN FULL-TIME HEALTH UNITS

FULL-TIME health units established in the provinces of Canada are rapidly increasing. The greatest development of this medical service has been in the Province of Quebec, and before the year closes it is contemplated that at least 20 more units will be established. British Columbia and Saskatchewan also have several full-time health units.

A unit consists of a full-time health officer who has had training in public health administration; one or more public health nurses; a sanitary inspector

and a clerk. Such a staff cares for the health of a county of about 40,000 population. The total cost of operating a unit, including traveling expenses is from $10,000 to $12,000 a year.

The Pictou County Medical Society, Nova Scotia, recently appointed a committee to investigate the establishment of a full-time health unit in Pictou County.

INDUSTRIAL SANITATION AT HARVARD

A NEW course of study in the Harvard Engineering School in coöperation with the Harvard School of Public Health will be inaugurated at the opening of the college year. Directors of these schools have become convinced that there is a need for engineers whose special studies have prepared them to cooperate with the industrial physician in problems of plant sanitation and hygiene. This course to be known as "Industrial Sanitation," will lead to the degree of Master of Science in Engineering.

HEALTH—SUBJECT AT CALIFORNIA MUNICIPAL INSTITUTE

PUBLIC health was one of the subjects discussed at the Institute of Municipal Administration at the University of Southern California, Los Angeles, Calif., August 13-18. This was the first educational project of its kind for municipal directors. The institute brought together mayors, city managers and commissioners, city and county officials and citizens actively interested in public affairs. The 6-day program covered a scientific and practical study of modern municipal administration.

Abel Wolman, chief engineer of the State Department of Health, Baltimore, Md., a member of the Engineering Section of the American Public Health Association, headed the section on sanitary engineering. Professor Ira V. Hiscock of the School of Public Health, College of Medicine, Yale University, also a member of the American Public Health Association, and who was in Los Angeles County making an appraisal of health activities of the county, under direction of the Committee on Administrative Practice, American Public Health Association, was a special lecturer on public health at the Institute.

SEDGWICK MEMORIAL LECTURE AT WOODS HOLE

THE seventh William Thompson Sedgwick Memorial lecture was given by Edwin Grant Conklin, Ph.D., Sc.D., LL.D., at the Marine Biological Laboratory, Woods Hole, Mass., July 27. Dr. Conklin's subject was "Problems of Development." He is a member of the National Academy of Sciences and Professor of Biology, Princeton University.

This lectureship was established in 1922. The lectures are under the auspices of the Department of Biology, Massachusetts Institute of Technology, which was created by Professor Sedgwick. The previous lecturers have been, Edmund Beecher Wilson, Ph.D., M.D., William Henry Welch, M.D., Winthrop John Vanleuven Osterhout, Ph.D., Sc.D., Charles Value Chapin, M.D., Sc.D., Thomas Hunt Morgan, Ph.D., S.C., and Haven Emerson, M.D.

HEALTH TO BE TAUGHT BY MOTION PICTURES

A series of health education films for use in classrooms of public schools will be worked out by the Department of Biology and Public Health, Massachusetts Institute of Technology, and the Eastman Teaching Films, Inc. Professor C. E. Turner of M. I. T. will direct the preparation of the subject matter to be filmed, and he will be assisted by Georgie B. Collins, who has resigned as director of health education in the public schools of Malden, Mass., to begin work on the films.

BETTER HEALTH IN MISSISSIPPI FLOOD AREA

DEVELOPMENT of sanitation following the Mississippi Valley flood has steadily extended throughout the flood area until 78 counties are listed as receiving adequate public health protection from a staff of more than 300 full-time health workers. The U. S. Public Health Service reports that better communities are being built on the ruins of those destroyed by the flood, and that a modern and more extensive health program has been inaugurated.

RADIUM-MESOTHORIUM DANGEROUS

THE Committee on Public Health Relations of the New York Academy of Medicine is protesting the extent of the use of radium-mesothorium in industry because of its danger to workers. The committee has sent a protest to Surgeon General Hugh S. Cumming of the U. S. Public Health Service in the hope that he will investigate conditions.

MANY CALIFORNIA WATER SUPPLIES ARE NOW CHLORINATED

A recent survey of public water supplies in California reveals the fact that the water from 68 such supplies is chlorinated, thereby insuring the safety of the drinking water used by 3,185,000 regular consumers. The total amount of water so treated is one-half billion gallons daily. This constitutes an outstanding achievement and is largely responsible for the great reduction in water-borne typhoid in California. The development of this procedure has been comparatively rapid, since chlorination was started in California only 13 years ago.

ENGINEERS GO TO JAPAN

THE first World Engineering Congress will be held in Tokio, Japan, October, 1929, under the auspices of the Kogakkai, the Engineering Society of Japan. The purpose of the congress, first proposed by the Kogakkai, which is making elaborate preparations for the international meeting of engineering societies, is to promote international coöperation in the study and application of engineering science and permit the exchange of professional ideas.

The American committee with headquarters at the Engineering Societies Building, New York, N. Y., is planning the program to be contributed by American delegates from national engineering societies.

PERSONALS

DR. J. L. PARKER has been appointed City Health Officer of Brawley, Calif., to succeed Dr. Eugene Le Baron, who has served that city for many years.

DR. CLARA M. RINEHART has been appointed City Health Officer of Tehachapi, Calif., to succeed Dr. Rupert G. Doupe.

CLARENCE R. WALTER has succeeded Dr. M. E. Westphal as City Health Officer of Atherton in San Mateo County, Calif.

DR. JOHN W. Cox of Alexandria, Va., has been appointed a field representative of the American Society for the Control of Cancer, New York, N. Y.

DR. GEORGE H. PRESTON, Baltimore, Md., has been appointed Commissioner of Mental Hygiene by Governor Ritchie to succeed the late Dr. Arthur P. Herring.

DR. PHILETUS A. HAYES, for more than 32 years Health Officer of Afton, Chenango County, N. Y., resigned on July 1.

DR. FRED J. WAMPLER has been appointed Professor of Preventive Medicine in the Medical College, University of

Virginia, and Medical Director of the out-patient department. He will also have charge of the laboratory of clinical pathology. Dr. Wampler was formerly field associate director for Shansi Province, China, for the Council on Health Education. At one time he served as acting director of the council.

DR. JOHN A. GARDNER has resigned after many years' service as Health Officer of La Grange Park, Ill.

SURGEON GENERAL HUGH S. CUMMING has been elected a corresponding member of the Royal Society of Medicine of Great Britain.

EDNA L. FOLEY, Superintendent, Visiting Nurse Association of Chicago, has been awarded the honorary degree of Doctor of Science by Smith College, in recognition of her work in the field of public nursing. Smith College has awarded this degree to only a few others, among whom are Madam Curie and Dr. Alice Hamilton.

DR. SAIR C. MOORE has been appointed Health Officer of Cadillac, Mich.

DR. PAUL D. MOSSMAN, trachoma specialist of the U. S. Public Health Service, recently made a tour at the request of the Montana State Board of Health to ascertain in which sections of the state trachoma exists. The schools of Wolf Point and Cut Bank, Mont. were particularly examined, as there seemed to be a confusion of opinion in the diagnosis of cases in these schools.

DR. EDWARD P. WHITE, Columbia, S. C., has been appointed Director of the Cherokee County Health Department, succeeding Dr. Patrick H. Smith of Gaffney, S. C.

DR. WALTER G. DARLING has been appointed Health Officer of Shorewood, Wis., to succeed Dr. H. H. Becker.

DR. ROLAND E. SCHOEN has been appointed Health Officer of Beaver Dam, Wis.

DR. JAMES D. LEWIS has resigned as Director of Public Health of Scranton, Pa.

DR. WILLIAM L. HELMS has been appointed Health Officer of Taylor, Tex.

DR. MARY BERKES WETMORE, the first woman graduate from the School of Medicine, University of Buffalo, died June 18 in Buffalo. She was the widow of Dr. Samuel W. Wetmore a physician of Buffalo a member of the faculty of the Buffalo University School of Medicine.

DR. J. F. HAZZLEWOOD, director of the Toronto Public Health Laboratory, Toronto, Can., has resigned to fill the vacancy of the Medical Staff of the Ontario Workmen's Compensation Board caused by the death of Dr. W. E. Struthers.

DR. S. B. RICHARDS has been appointed health officer of San Bernardino County, Calif., to succeed Dr. Emil W. Meyer.

DR. JOHN B. CRAIG has been appointed Health Officer of the City of Upland, Calif.

DR. SIDNEY A. GOYETTE, Yuba City, Calif., has succeeded Dr. Trusten P. Peery as Health Officer of Sutter County.

DR. ARNOLD S. ANDERSON, who was formerly with the sanatorium is now in charge of the tuberculosis division of the Minnesota Public Health Association, St. Paul, Minn.

DR. JAMES S. FITZHUGH, Island, Ky., has resigned as Health Officer of McLean County.

DR. HARRIS W. TERRELL has been appointed full-time Health Officer of Ohio County, Ky.

DR. ALEXANDER A. WEECH, Baltimore, Md., is to spend a year in Peking Union Medical College, Peking, China, as associate professor of pediatrics.

DR. CLARENCE W. BUCKMASTER has been reappointed health officer of Yonkers, N. Y.

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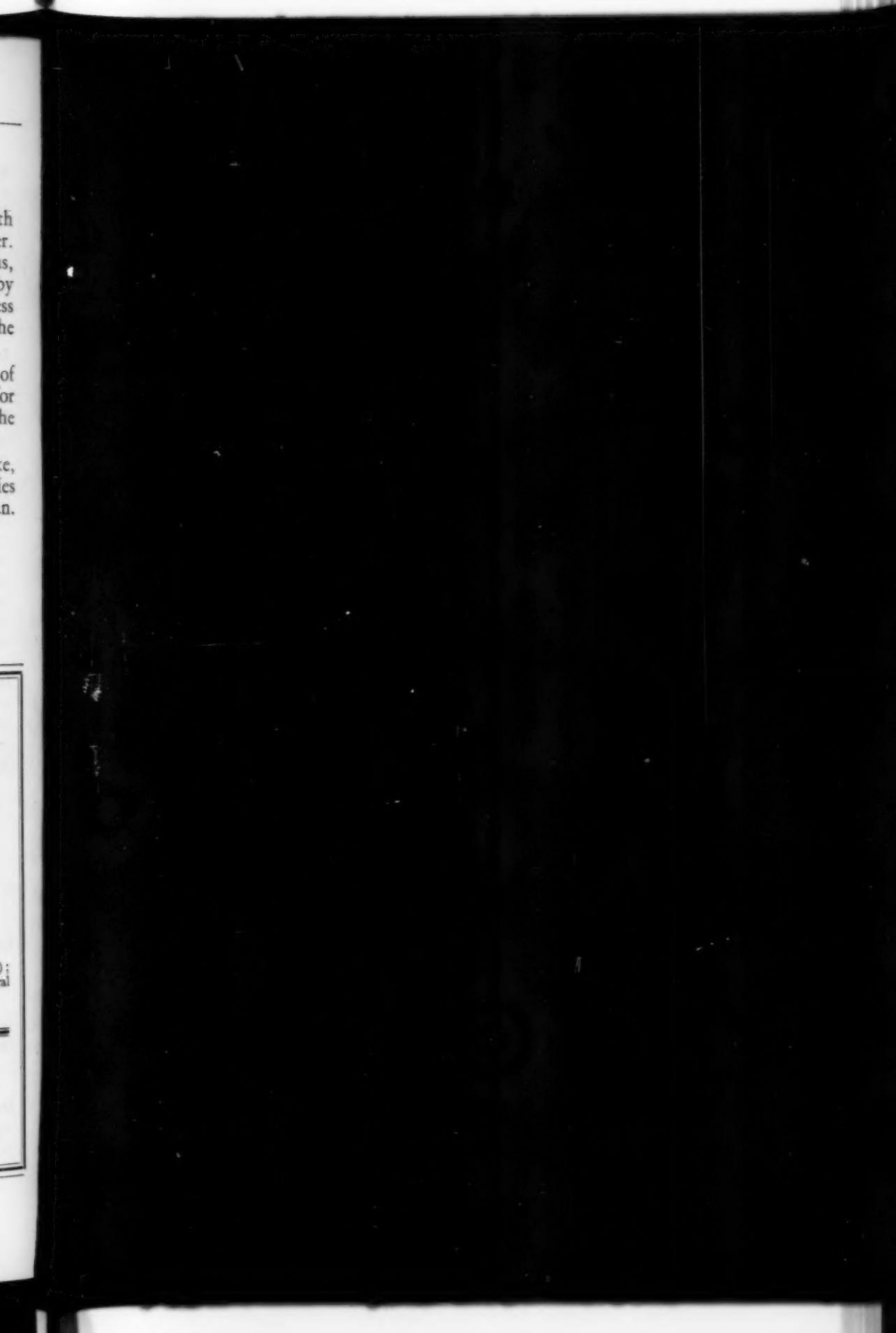
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